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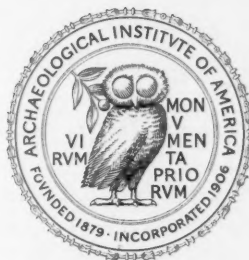
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The Lion of Amphipolis

SHORTLY BEFORE THE OUTBREAK OF WORLD War II, members of the American and French Schools in Athens co-operated in an investigation of the colossal marble lion set up on the right bank of the Strymon river, opposite the Macedonian city of Amphipolis. The marble figure, of the same size as the better-known Chaeronea Lion, which it resembles in pose, was reconstructed at its original site, on an improvised base of ancient blocks. Mr. JACQUES ROGER, of the French School in Athens, and the undersigned, representing the American School, shared the archaeological work. Funds for the project were collected by the American Ambassador to Greece, Mr. LINCOLN MACVEAGH, who was the moving spirit in the undertaking.

The base upon which the fragments of the lion were reassembled was designed to raise the figure to the proper height, but was not intended to convey an impression of the original monument. The meager architectural remains and the foundations have made it possible, however, to construct a

plaster model showing the essential details of the monument. This model, to a scale of 1 : 40, has now been prepared by the master modeler in the Athenian Agora, CHRISTOS MAMELIS, from a drawing by GORHAM P. STEVENS. The lion itself was modeled in plasticine by the Athenian sculptor JOHN NOTARAS and cast in plaster by Mr. MAMELIS. The completed model shows, for the first time since its destruction, the true proportions and artistic finish of the monument as a whole.

Though the region where it stands became the scene of military operations during the last war and of more recent disturbances between the Greek rebels and the national army, the monument has not suffered damage. Close to the new road between Thessaloniki and Kavalla, which follows the Via Egnatia of Roman times, the lion again stands facing the bridge, a silent sentinel keeping watch over the flow of traffic across the Strymon, which has been the scene of many battles, ancient and modern. — OSCAR BRONEER.

ART SALVAGED FROM THE SEA

By George Karo

George Karo, a native of Germany and a graduate (Ph.D.) of the University of Bonn, was assistant director of the German Archaeological Institute in Athens from 1905 to 1911, and its director from 1911 to 1920 and from 1930 to 1936. He directed the excavations at Tiryns in 1910-1915 and 1926-1932, and at Athens in 1930-1936. He settled in the United States in 1939, and is now teaching at Pomona College, Claremont, California.

IN THE EARLY YEARS OF THE EMPEROR AUGUSTUS' reign, not long after 30 B.C., a large vessel, loaded with marble and bronze statues, was driving before the wind, off the southernmost tip of Greece, on her way to Italy. The storm must have been too violent for her to risk the dangerous channel between the mainland and the island of Kythera. Farther south, a rocky islet, now called Antikythera, has always offered some slight cover against northerly gales. But as the ship rounded it, her unwieldy cargo was bound to shift ominously, its heavy weight pounding against the sides until the planks gave way. Close to a saving cove in shallow water, she sank to the rocky sea-floor.

An unchronicled disaster—no doubt one of very many. For ever since the last decades of the Republic a steadily increasing stream of artistic treasures had been pouring into the capital of the ancient world: sculptures and paintings, precious bronzes and silverware, carved and inlaid furniture. The palaces and villas of emperors and high officials, distinguished collectors and vulgar profiteers, were veritable museums of Greek, oriental, and Egyptian art, for which sanctuaries and towns were looted, and an army of clever craftsmen in marble copied unobtainable masterpieces. We have detailed accounts of all this: literary sources like Cicero's letters or Petronius' delightful description of the ignorant "collector" Trimalchio, and the ruins of Rome, Pompeii, and Herculaneum, so rich in original Greek works and copies.

As the power and wealth of Rome increased, huge consignments of foreign marbles, columns and cornices and even enormous Egyptian obelisks, were brought across the Mediterranean on ships and rafts. How hazardous such voyages were is best illustrated by the fact that the French steamer which brought the bronze statue of F. DE LESSEPS

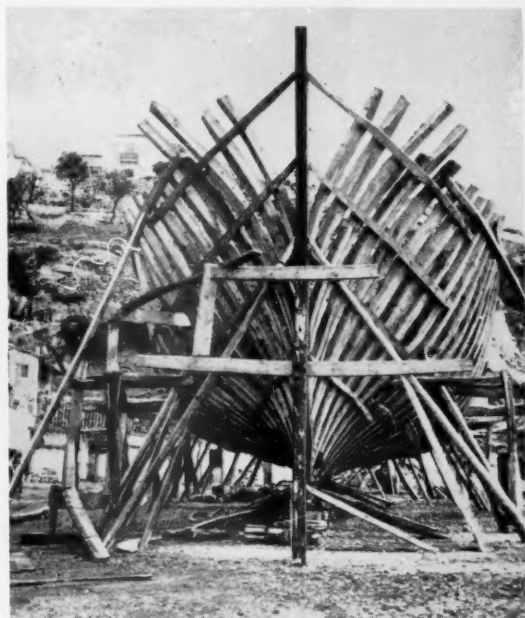


FIG. 1. A Greek caique, from *This is Greece*, edited by ALISON FRANTZ and LUCY TALCOTT (1941), page 42.

to Egypt, for the opening of the Suez Canal in 1869, nearly foundered when the statue shifted in the hold: a fate which certainly overtook many of the vessels that carried their treasures to Italy. Only one modern case is on record: when LORD ELGIN shipped the famous marbles from the Acropolis of Athens to England in 1803, one of his ships was wrecked on the coast of Kythera. It took three years, with the help of divers, to recover the precious cargo. That was all one could tell about such disasters till 1900, when a

series of spectacular discoveries by sponge-fishers began.

The Greek sponge-fishers are a race or tribe apart, who have carried on their hazardous profession for generations. Most daring of all Mediterranean seamen, fully aware of the fatal consequences of excessive diving which doom them to an early death, but does not deter their sons from taking over, they work and play with equal reck-

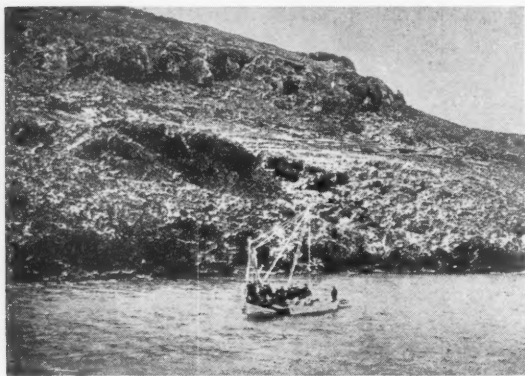


FIG. 2. The sponge-fishers' boat off Antikythera, from N. SVORONOS, *Das Athener Nationalmuseum*, page 1.

lessness. After a short but exhausting campaign, mostly in North African waters where the finest sponges grow on the sea-floor, they return to their native islands, rich according to their modest standards, and paint the town red, as far as that is possible in the decorous atmosphere of a Greek village. When motorcars were still almost unknown in the Aegean archipelago, and useless anyhow because there were no roads, a group of sponge-fishers in Aegina had one mile of carriage road built along the sea front of their native town, bought an old Ford, and drove up and down that mile, amid triumphant yells and claxon hoots.

Antikythera

The Aeginetan *sphoungarades* have a good name, but the most renowned for their skill and daring hail from the small island of Syme in the Dodekanese, now at last happily reunited with Greece. Such men are heroes, and as such die young; their exploits are told, suitably embellished, in the seaside taverns where fishermen congregate. And their code of honor and courage is high.

Shortly before Easter of 1900, such a Symiote crew left the Tunisian waters for home, on two

caiques, cutters which in size, shape and equipment hardly differed from similar craft that had plied the Mediterranean for the last three or four thousand years (FIGURE 1). (The revolutionary innovation of outboard motors was not to reach the Aegean for another quarter of a century.) There were six divers, and a complement of twenty-two oarsmen for calm days when sails would be useless.

A gale drove the Symiotes out of their course, to the barren, almost uninhabited islet of Antikythera (or Cerigotto, in the Italian *lingua franca* of the Mediterranean). As they lay some twenty-five yards off the headland which borders the little harbor of the island (FIGURE 2), they thought they might as well look for sponges on the rocky bottom. When they got down, one of the divers, ELIAS STADIATIS, to his vast amazement, sighted the remains of a large ship, an enormous heap of bronze and marble figures and various other objects, at a depth of about nine fathoms. To prove he was not romancing, he brought up a bronze arm larger than life.

The skipper, DEMETRIOS KONDOS, himself an old master diver, promptly corroborated this stunning discovery; then he took some measurements and sailed home to Syme. After prolonged confabulation with the notables of the island, he decided to go to Athens and inform the Greek government, taking STADIATIS and the bronze arm along. There an agreement was reached, promising the sponge-fishers adequate compensation for the treasures they would recover and hand over. A vessel of the Hellenic Navy with the necessary machinery for hauling up heavy weights was to assist them in their difficult task. A government archaeologist would be on board.

Delays ensued. When operations at last began, towards the end of November, stormy weather put a stop to them after only three hours. And similar aggravating interruptions occurred after every fresh attempt. So the work dragged on for nine whole months, in those peculiarly unfavorable waters. Only six divers were available, and they could not bear the strain of diving more than twice a day. Nor could they work for longer than five minutes on the sea-floor with the very primitive equipment at their disposal: thus their collective efforts only amounted to one full hour's work a day.

And what work it was! Standing insecurely on the slanting bottom, they had to dig and scrape the sculptures out of sand and mud, tie stiff wet ropes around slimy, slippery bodies of bronze and marble, knot them firmly and return to the sur-

face, breathless and exhausted, while the crane of the attendant ship wound up the load. If a rope slipped, at best a day's work would be lost; but the statue might also roll into deep, inaccessible water, and the recoil of the rope could be very dangerous. Under such conditions, it seems almost miraculous that during those three hours of the first day's work a life-size bronze head, two large marble statues, and several smaller objects were recovered.

This unique archaeological enterprise was doggedly carried on, by fits and starts, with incessant interruptions by storms, extraordinary technical difficulties and the growing exhaustion of the divers. Some days proved rich in results; then a long, disheartening, sterile spell would follow. Much time was lost in clearing away fallen rocks, in the hope of precious finds under them, and in digging through hard, silt-encrusted shale. Such excavations had to be accomplished within a few hurried minutes, in the eternal submarine twilight. The weather continued vile. After a time, four new divers were added to the small original group, and all worked indefatigably, heroically; two were permanently disabled, and one died.

Yet these illiterate fishermen, totally ignorant of archaeological techniques, treated the finds with quite remarkable care and delicacy. I had occasion to examine them, very soon after their arrival in Athens, and was amazed at the insignificant amount of recent damage. Not only had the sculptures been handled with evident gentleness, but even pottery and glass vases had been brought up intact. The results filled a long gallery in the National Museum at Athens. The bronzes comprised a splendid nude statue of a young god or hero, larger than life, excellent work of the fourth century B.C., a couple of fine fifth-century statuettes, and remains of what may have been a group of five or six draped men, Hellenistic portraits of which one head was found the first day (FIGURE 3). All these must have been looted from some Greek sanctuary; the lead castings under their feet show that they had been torn from stone bases. The missing heads and bodies are undoubtedly still lying on the sea-floor, probably at a depth unattainable to Greek divers.

The marbles were far less satisfactory. They have nearly all been terribly corroded by sea-water and defaced by encrusted shells. Some are just formless lumps, others have spindly stumps instead of limbs. They look like lepers in advanced stages of the hideous disease (FIGURE 4). They are mostly commercial copies of famous originals,

probably made at Athens for the export trade in the last decades B.C. The date is assured by a broken and incomplete bronze instrument, for calculating the rise of stars, the only extant astrolabe of antiquity. Its inscriptions prove it to have been made shortly after 30 B.C. We owe a debt of gratitude to the divers for having carefully collected what must have seemed to them insignificant bits of broken metal.



FIG. 3. Remains of a bronze statue from Antikythera, from N. SVORONOS, *Das Athener Nationalmuseum*, plate 4.

The discoveries of Antikythera caused a great stir in archaeological and artistic circles; there was a general feeling that the most modern diving equipment should be procured, to carry the search into deeper waters. But nothing came of it. The only adequately equipped and manned salvage ship of those happy times—when the Mediterranean sea-floor was not yet littered with wrecks of two World Wars—belonged to an Italian company which demanded half of all the expected artistic finds. The Greek Government was forbidden by

law to offer works of art as compensation. The negotiations ceased, the initial excitement soon cooled off, and after a few years the sculptures from Antikythera were just a part, and not even the most precious part, of the National Museum's treasures.

Mahdia

The summer of 1907 brought a new surprise. This time Greek sponge-fishers discovered a wreck in their favored Tunisian hunting grounds, off Mahdia between Sousse and Sfax, three miles from the coast in fairly shallow water. The great resources of the French Government in money and

whom these works were destined had a less severely classical taste than the Antikythera lot would have appealed to. But the Mahdia vessel likewise must have sailed from Piraeus harbor shortly after the birth of Christ. That is all we can say. The finds were taken to Tunis, less over-run by tourists than Athens, and today only specialists know or care about them.

Artemision

The First World War brought a surfeit of far more tragic wrecks. But of course archaeologists remembered those two Greek ships. In the second half of the twenties I was lucky enough to interest the leading Greek patron of art, ALEXANDER BENAKIS, in the problems involved, and he generously offered to provide modern diving equipment to the amount of five hundred pounds. It seemed to come just in the nick of time. For sponge-fishers had brought up the left arm of a great bronze statue from the sound between the Thessalian coast and Cape Artemision, the northern tip of the great island Euboea.

In 1928, with the assistance of the Greek Navy, divers descended to a depth of more than twenty fathoms, some six hundred yards from the coast, and succeeded in bringing up the statue whose arm had preceded it: a magnificent bearded nude god, probably Zeus brandishing the thunderbolt (FIGURE 5). Larger than life, admirably preserved, this is the finest Greek bronze ever found, undoubtedly the work of a leading mid-fifth-century master. It would be worthy of the great Phidias himself. Then the broken parts of another unique bronze masterpiece were recovered: a rearing racehorse with a tiny jockey or stable-lad. Some fragments were found at a considerable distance from the first discovery; the whole group was reconstructed by PANAGIOTAKIS, the clever sculptor of the National Museum. The strong current which makes those waters dangerous must have swept the bronzes along from the scene of the shipwreck.

The great depth made further investigations impossible, the more so as the best Greek divers refused to use the newfangled foreign equipment. One of them scoffed at the precaution of rising very slowly to the surface. He surged up rapidly from a depth to which he was unused, laughed at his cautious colleagues—and fell down dead, blood vessels ruptured.

The incident did not encourage further diving. The two great bronzes became the chief pride of the National Museum; but though they were evidently not the only spoils taken from some



FIG. 4. Marble satyr from Antikythera, from N. SVORONOS, *Das Athener Nationalmuseum*, plate 12.

machinery were available. Yet it took four campaigns to clear the greater part of the large vessel, and as far as I know the task was never quite completed.

The cargo was mainly composed of some sixty Ionic marble columns from the Attic quarries on Mount Hymettus, freshly worked and evidently destined for some sumptuous building in Italy. There were also numerous fragments of marble statues and a couple of great decorative vases adorned with reliefs. The bronzes, admirably preserved, included lamps, candelabra, ornamental pieces of couches and chairs, and a few exquisite figures, chief among them a statue of Eros, leaning on a pillar surmounted by the bearded head of Dionysus, and signed by the well-known Greek sculptor Boethos, who flourished at the turn of the third and second centuries B.C.

That may well be the date of some large statuettes, an Eros playing the lyre, a youthful satyr, and three delightfully grotesque dancing dwarfs, unique of their kind. Evidently the collector for

FIG. 5. Zeus from Artemision, from E. BUSCHOR, *Plastik der Griechen*, page 75.



great sanctuary, and the facts simply cried out for intensified research, nothing could be done. The only really adequate diving apparatus produced at that time in Europe, by a firm in Luebeck, cost 60,000 gold marks and was too heavy for the salvage vessels which the Greek Navy could provide for the purpose. Moreover, as competent authorities very truly remarked, the rest of the treasure is quite safe, guarded for a better day by twenty fathoms of water.

Piraeus

In the meantime, another ancient wreck turned up, in the winter of 1930-31, right in the main basin of Piraeus harbor, of all places. Dredging operations uncovered the remains of a flat-bottomed transport, which had evidently caught fire and sunk as it was lying in port, ready to sail for Italy with a cargo of decorative marbles. Most of them are large reliefs destined for buildings overseas (FIGURES 6 AND 7). As they were partly damaged by the fire, the owners did not trouble to raise them; such commercial works, bearing the mark of the second century A.D., could easily be replaced.

Their discovery would have been disappointing, but for one group of reliefs, which quite unexpectedly shed new light on one of the most celebrated masterpieces of Greek art: the colossal statue of Athena, which Phidias fashioned of ivory and gold for the Parthenon (unveiled in 438 B.C.). He adorned the goddess' shield with a battle of Greeks and Amazons. We had a sketchy idea of this scene from a tiny copy in the British Museum;

now several figures reappear, probably in the original size, on these reliefs. On each one Greek and one Amazon, arbitrarily chosen, fill the frame; but though these pairs are used for purely decorative purposes, they convey a much more vivid impression of the master's style than we could deduce from the small commercial copies that we knew.

Unfortunately, the portraits of himself and of his great patron, Perikles, which Phidias had included in the Greek host, apparently were not copied for the decorative reliefs—unless they are still embedded in the deep slime of the harbor, which, by the way, preserved these marbles from the fate of those from Antikythera.

Must all these endeavors remain incomplete, with tantalizing question marks? I hope not. Of course war-torn Greece needs assistance in countless matters of the utmost urgency, and it would seem preposterous even to mention archaeological exploration below the sea. Yet this may not always remain a Utopian wish. A considerable part of the American millions devoted to the recovery of that heroic little country will be spent on scientific enterprises, with American specialists directing Greek workmen. American ships with every modern equipment will be plying the Aegean. Some will no doubt be used for submarine work like the repairing of the Corinth canal.

Such vessels would carry machinery for exploring the sea-floor at depths quite inaccessible twenty years ago. Specially trained engineers would instruct and direct Greek divers and other seamen. The American School of Classical Stud-



FIGS. 6 and 7. Reliefs from the Piraeus, from G. KARO, *Archaeologischer Anzeiger* (1931), pages 227-230, figures 6, 8-10.

ies in Athens has a larger staff of experienced field archaeologists than ever before; and though the Greek pioneers of Antikythera and Artemision are almost all dead, well-trained younger scholars

can take their places. Under such circumstances, it would be easy to investigate the sea-floor at points ill-famed for shipwrecks — a thrilling new departure in archaeology.

[A number of undersea discoveries have been published in journals or volumes not widely circulated in this country. We accordingly append Dr. KARO's useful bibliography.—Ed.]

The famous mid-fifth-century bronze boy in Florence, commonly called the Idolino, is often quoted as having been found in the sea off Pesaro on the Adriatic coast; actually it was excavated in a ruined Roman building in 1530 (AMELUNG, *Fuehrer durch die Antiken in Florenz*, page 273). The Tyrrhenian Sea has given up several bronzes; a fine Early Classical male torso and four portrait heads (Homer, Sophocles, and two unknown men), found off Livorno early in the eighteenth century, may have come from a Roman villa on the seaside (AMELUNG, pages 275-276). The Apollo Piombino in the Louvre, an excellent Greek statue of the beginning of the fifth century B.C., was recovered a century ago from the straits between the island of Elba and the coast of Etruria (A. DE RID-

DER, *Bronzes du Louvre*, plate 1; W. DEONNA, *Les Apollons archaïques*, page 274, no. 102; J. CHARBONNEAUX, *Sculpture grecque archaïque*, plates 64 and 65).

The channel leading to the port of Bizerte in Tunisia yielded a number of miscellaneous antiques, among them two great Roman dishes in silver gilt, richly embossed (C. GAUCKLER, *Monuments Piot* 2 [1895] pages 77 ff. and plates 8 and 9). The sea around the island of Rhodes has also been fruitful: To a unique bronze Gorgon (in the Louvre, A. DE RIDDER, *Bronzes du Louvre*, plate 92), I can add a sumptuous gold cup, acquired early in this century by the COMTESSE DE BEARN, when her yacht was cruising in the Dodekanese; a fisherman offered this prize, which his net had brought up, for its weight in gold pieces. It was promptly weighed, on scales brought from the cook's galley, against a pile of louis d'or.

A statue of Poseidon, probably made by a Corinthian or Sicyonian master around

500 B.C., lay off the southern coast of central Greece, in shallow water. It originally stood in a small sanctuary of the god, near the modern village of Livadhostro. Since 1898, it has been in the National Museum, Athens (no. 11761; S. PAPASPYRIDIS, *Guide du Musée national d'Athènes*, page 216; *Ephemeris* [1899] plate 6; H. BULLE, *Der schoene Mensch*, page 83, plate 39. In its recently repaired state: G. KARO, *Greek Personality in Archaic Sculpture*, pages 140-141, plate 16).

Antikythera: V. STAIS, *The Finds from Antikythera* (1905; in Greek); *Ephemeris* (1902) plates 7 ff.; N. SVORONOS, *Das Athenen Nationalmuseum* (1903) pages 1 ff. and plates 1-20 (our figures 2-4); PAPASPYRIDIS, pages 83 (no. 2774) and 220 (no. 13400); FR. STUDNICZKA, *Archaeologischer Anzeiger* (1921) pages 334 ff.

Mahdia, on the Tunisian coast between Sousse and Sfax, northeast of Cape Africa: The wreck lies 39 meters deep. Four cam-

paings of excavation, 1907-1910. Reports, mostly by A. MERLIN, in the *Comptes rendus de l'Académie des Inscriptions* of those years. The finest bronzes were published by A. MERLIN and L. POINSSOT, in *Monuments Piot* 17 (1909) pages 29 ff., plates 1-4, and 18 (1910) pages 5 ff., plates 1-5. The date of the shipwreck is furnished by a series of commercial marble statues and reliefs, made in Athens in the first century A.D. This is corroborated by a set of new, unused Ionian columns, in marble from Mount Hymettus, which formed the greater part of the cargo. The bronze head of a youth, recovered more than fifty years ago from the sea off Sousse, may possibly come from the same ship (*Musées de Sousse*, page 79, plate 10).

The Marathon Boy, recovered in 1925: PAPASPYRIDIS, pages 216 ff., no. 15118; BEAZLEY-ASHMOLE, *Greek Sculpture and Painting*, page 55, figure 126; G. M. A. RICHTER, *Greek Sculpture*, figures 46 ff.; E. BUSCHOR, *Plastik der Griechen*, page 87; definitive publication by K. RHO-

MAIOS, *Antike Denkmäler* 4 (1929) pages 54 ff., plates 30-37.

Artemision: discoveries of 1928 and 1936. R. HERBIG, *Archaeologischer Anzeiger* (1928) pages 607 ff. and F. NOACK, *Die Antike* 5 (1929) pages 214 ff. (photographs taken before the bronzes were cleaned); CHR. KAROUZOS, *Journal of Hellenic Studies* 48 (1929) pages 141 ff., and *Deltion* 13 (1930-31) pages 44 ff.; BEAZLEY, l. c., page 34, figures 67-68; BUSCHOR, l. c., page 75; excellent photographs by G. M. YOUNG, *Annual of the British School at Athens* 36 (1936-37) page 275 and plates 26-30. In calling the great god Zeus I follow BEAZLEY, NOACK and YOUNG; BUSCHOR and KAROUZOS call him Poseidon. The decisive attribute, thunderbolt or trident, is lost.—The boyish jockey has been universally dated in later Hellenistic times, around or after 200 B.C., but BUSCHOR claimed that his magnificent horse was much older (fifth century B.C.), the rider being a later addition or replacement. As fragments recovered later prove

the horse to be rearing, I think the whole group belongs to the same period; a life-size free statue of a horse, standing on its hind legs only, hardly seems possible in the fifth century.

Piraeus: G. KARO, *Archaeologischer Anzeiger* (1931) pages 227 ff., figures 6 and 8-10 (our figures 6-7); H. PAYNE, *Journal of Hellenic Studies* 51 (1931) pages 187-188 and figure 5; H. SCHRADER, *Sitzungs-Berichte der Akademie*, Berlin (1931) pages 85 ff. The latest of the archaic marble reliefs, Attic work of the second century A.D., give an approximate date for the shipwreck.

The latest account of deep-sea diving operations known to me was given by MAX GENE NOHL, widely known submarine explorer, in a lecture at Iowa City, in October, 1947; he had reached a depth of 420 feet, clad in a flexible rubber suit of his own invention (*Iowa City Press-Citizen*, October 31, 1947, page 9).

— G. K.

ARCHAEOLOGICAL INSTITUTE OF AMERICA

FIFTIETH GENERAL MEETING

St. Louis, Missouri

December 28-30, 1948



Abusir: South wall of temple enclosure as now preserved. Along it may be seen the foundations of monastic cells once built against it.

RESTORATION OF THE TEMPLE OF ABUSIR

By Jasper Y. Brinton

Judge Brinton, President of the Cour d'Appel Mixte, Alexandria, until his retirement last month, is President of the Royal Archaeological Society, Alexandria.

UPON THE INITIATIVE OF THE ROYAL ARCHAEOLOGICAL Society of Alexandria, the Antiquities Department of the Egyptian Government has undertaken a work of first-rate importance in underpinning and restoring the walls of the majestic temple of Abusir, which overlooks the sea thirty miles to the west of Alexandria.

This massive quadrangular structure, the finest ancient monument in Egypt north of Cairo, consists of a large walled enclosure, approximately a hundred yards square, surrounding a temple area thickly strewn with the ruins of the successive structures, including those of Christian churches and monastic cells, which once covered it.

In spite of the destruction wrought by earthquakes and the hand of man, large sections of the four walls are still standing, including the two great pylons on the sides of the main eastern entrance, each with its stone stairs leading up through the middle of the solid masonry to the upper parapet, and with the grooves, intended to hold masts for flags and banners, quite visible on the outer face.

Much of what is left, however, is in highly insecure state, and threatened by the giving away of the foundation piers. It is the essential labor of

consolidation, a slow and expensive process, that has now been undertaken. The program as laid down calls for an expenditure of twenty-five hundred pounds a year for three years.

As indicated by its ancient name, Taposiris Magna, the temple itself, which has given its name to the now ruined and uninhabited town which lies on the southern slope of the sandstone ridge, was probably sacred to Osiris, and it was the center from which the Prefect of Egypt took the census for the Emperor Justinian. The town was a commercial center of considerable importance, lying at the western end of the navigable waters of Lake Mareotis, and it was doubtless also frequented by pleasure-seekers from Alexandria. As hardly any traces of a civilization earlier than the Pharaonic have been found, it may be attributed to the first century of that dynasty.

The work now in hand should act as a prelude to the undertaking of important archaeological and topographical work in the area both of the temple and of the adjoining town. The accompanying photographs will give some idea of the nature and urgency of the work in progress.



Left: Southwest corner of enclosure walls, Abusir, showing their threatened condition. Right: North side of one of the two main pylons. It is hoped to reconstruct the wall, which originally reached halfway up the pylon.



Left: Corner of the north wall, Abusir, showing props and fallen blocks. In the background is the Mediterranean. Right: Preparing new blocks for the underpinning of the walls.



Left: Repairs in progress on the east wall of the temple, Abusir. Right: Construction of a rest house for visitors to the site has been begun.

Symbols for Cities

During the classical period of Greece, each independent city-state claimed the right to strike its own coinage. As a result, coins from hundreds of different mints came into circulation. In the case of coins of precious metals, silver, electrum, or gold, the government which issued them stood as guarantor of the purity of the metal, and consequently of the value of the coins.

In order to identify itself, and thereby make its coins acceptable in ordinary transactions, each mint adopted its own distinctive symbol or symbols. Those of important commercial centers were issued in large numbers, and became widely known. The outstanding example is the coins of Athens, with the helmeted head of Athena on one side and the famous little owl on the other, a pair of types used without real change for centuries and often imitated by frontier states envious of their prestige. The 'owls' of Athens have been found from Spain to Afghanistan.

Coins of other cities, such as the Corinthian issues with Bellerophon's winged horse Pegasus, the Boeotian issues with the shield, those of Metapontum with the ear of wheat, the coins of Syracuse with the head of the fountain-nymph Arethusa, and the Rhodian issues with the rose, came to be almost as well known as those of Athens.

Where the name of the town was identical with, or similar to, or even merely suggestive of, the name of a familiar object, such as an animal, a fruit, or an article of daily use, a conventional representation of that object would obviously suggest itself as the distinctive symbol of that town on its coins. The Athena on the coins of Athens falls into this class, and so do the anchor (*ankyra*) on the coins of Ancyra, the rose (*rhodon*) on the coins of Rhodes, and many more.

These are known to numismatists as 'punning' or 'canting' types ('types parlants' in the French catalogues).

Such symbols must have been particularly appreciated by illiterates. At first no attempt was made to place the actual name of the issuing city on the coin; but even after this became customary, letters were useless to those who could not read. But anyone who frequented the market place would soon learn the shorthand practices of the die-cutters, and train himself to recognize the honey-bee, the rose, and the table, and the towns which issued them.

On the facing page are sixteen examples of punning types, from fifteen cities in various parts of the Greek world, selected from specimens in the collection of the American Numismatic Society, in New York. They are all reproduced to the same scale, approximately twice their actual size. — S. P. N.

FIG. 1. This protome (head and neck) of a goat (*aix, aigos*) appears on third-century bronze coins of the city of Aegae (*Aigai*) in Aeolis.

FIG. 2. On silver didrachms (two-drachma pieces) of the period 411–336 B.C., this figure of a rooster (*karusso, kerusso, 'proclaim'*) identifies the issuing city as Carystus (*Karystos*) in Euboea.

FIG. 3. Silver tetradrachms (four-drachma pieces) of the period 466–422 B.C., with this head of a lion (*leon*) were minted at Leontini (*Leontinoi*) in Sicily.

FIG. 4. This honey-bee (*melitta*) appears on fourth-century bronze coins of Melitaea (*Melitaia*) in Thessaly.

FIG. 5. Silver drachms of the sixth century with this figure of a Mediterranean seal (*phoke*) were minted at Phocaea (*Phokaia*) on the Ionian coast.

FIG. 6. On silver drachms of the period 330–282 B.C., this deer (*prox, prokos*) identifies the mint as that of Proconnesos 'deer island,' in the Sea of Marmara.

FIG. 7. This figure of a bull (*tauros*) appears on third-century bronze coins of Tauromenium (*Tauromenion*, modern Taormina), in Sicily.

FIG. 8. The pomegranate (*side*) was the canting device used on fifth-century silver staters from Side in Pamphylia.

FIG. 9. Fifth-century silver staters from the island of Melos in the Cyclades have this device of a fruit (*melon*), perhaps a quince.

FIG. 10. Silver didrachms of the early fifth century with this sprig of parsley (*selinon*) are identified as coins of Selinus (*Selinous*) in Sicily.

FIG. 11. Hellenistic coins from the island of Rhodes (*Rhodos*), such as this silver tetradrachm, betray their origin by this representation of a rose (*rhodon*).

FIG. 12. Fourth-century silver staters from the city of Aspendus (*Aspendos*) in Pamphylia show a figure of a slinger (*sphendonetes*).

FIG. 13. Fourth-century silver staters with this stern (left) or prow (right) of a yacht (*phaselos*) were minted at Phaselis in Lycia.

FIG. 14. About 400 B.C., the city of Cypsela (*Kypsela*) in Thrace issued bronze coins with this figure of a cup (*kypsele*).

FIG. 15. A table (*trapeza*), as on this fourth-century silver diobol (two-obol piece), identifies coins minted at Trapezus (*Trapezous*, modern Trebizond), on the Black Sea.



FOSSIL TREE FERNS OF IDAHO

By Henry N. Andrews, Jr.

This account of an unusual group of fossil plants has been designed to give the readers of ARCHAEOLOGY a representative picture of certain phases of paleobotanical investigation — the kinds of remains that are excavated, the methods of study employed, and the objectives of the science. The author, whose book on ancient plants was briefly noted in our second issue, is Acting Dean of the Henry Shaw School of Botany, Washington University, St. Louis, Missouri.

MANY GROUPS OF LIVING plants have been traced far back into earlier geologic periods. Some of the very oldest known land plants, from Silurian rocks of Australia, appear to be early representatives of the clubmosses that so abundantly carpet the floors of our eastern woodlands. The evergreens, including the pines, sequoias, and araucarias, go back at least one hundred million years and it is now clear that they evolved from a much earlier group which was abundant and widespread in Coal Age (Carboniferous) times.

The algae — the seaweeds and pondscums — go back much farther than any others, virtually into "geologically prehistoric" ages, but by virtue of their readily perishable nature, then as now, their remains are rarely preserved well enough to be of much account. And of our great modern dominant group, the flowering plants, all-important to the development and maintenance of man, many families have been traced back into late Mesozoic times; a great deal is known of their distribution during the succeeding Tertiary, particularly through the western states;



yet much remains to be learned of their origin.

It is the prime objective of the paleobotanist to work out the origins and racial developments of the plants we live with today. Thus far certain of the fern families have been most successfully dealt with. Partly on this account, and partly because of the author's interest in the ferns and related groups, the following pages have been prepared.

About a century ago small, and for the most part rather poorly preserved, fragments of petrified tree fern trunks were found in England and in eastern Europe. These were assigned the generic name *Tempskya*, after a Russian geologist of the early eighteenth century. In recent decades they have been found in the northwestern states of this country, but it is only

Fig. 1. A restoration of the Chalk Age *Tempskya*, based on specimens from Idaho. In contrast to modern tree ferns, these plants bore large quantities of small fronds on the upper half or more of the trunk. This restoration, from an india-ink drawing by A. SCHUTTE, is also reproduced on the front cover of this issue.

Fig. 2. Specimens of petrified *Tempskya* trunks, collected in a Cretaceous formation near Wayan in southeastern Idaho.



during the past few years that they have been obtained in abundance, giving us not only a better knowledge of their past distribution, but a fairly clear-cut picture of their appearance in life.

Briefly, the *Tempskya*s were columnar, unbranched tree ferns, probably attaining a height of 15 to 20 feet and a diameter of at least 16 inches. In their foliar habit, bearing large numbers of small leaves, they must have presented curious ornaments on the landscapes of far-ago. Our concept of their appearance in life is perhaps more readily understandable from a glance at the accompanying restoration than could be conveyed by many pages of description. The contrast with most modern tree ferns bearing their crown of a few large fronds is striking, to say the least, and, as we shall see, the internal organization of the trunk is equally divergent.

Less than a decade ago specimens of these curious ferns were few and far between; but, thanks to the aid of certain interested local collectors in the southeastern Idaho region, they have now been gathered in large numbers, sufficient to allow plenty of material for study and to point out quite clearly not only that they were widespread in Chalk Age (Cretaceous) times, but that, in some areas at least, they formed a numerically respectable element of the flora.

Much of the material on which our own investigations have been based was collected by, or in company with, Mr. HENRY THOMAS, a rancher of Wayan, Idaho, who gathered them first as curiosities and later for their scientific interest. Most of them have been taken along the hill-sides and in gullies where they have weathered out of the Wayan formation, of middle upper Cretaceous age. Specimens vary from the smallest fragments to trunk segments weighing 150 pounds or more. In size, they vary from a few inches up to 16 inches in diameter; at least, that is our record to date.

In the days when specimens were a rarity we gathered into our collecting sacks the smallest chips and fragments, all of which nevertheless appeared to be useful for anatomical study. As more abundant finds opened up, our collecting has been confined to specimens which represent a complete cross-section of the trunk. However, few if any have been found which constitute an entire trunk, but from a study of hundreds of specimens representing the bases, tips, and intermediate portions it has been possible to arrive at what seems to be an accurate picture of their proportions in life. A considerable number of the specimens range between six and ten inches in diameter and these, taken as typical mature plants, probably

attained a height of from eight to fifteen feet.

Observing a weathered or etched surface of a transverse section of one of these trunks, one sees large numbers, dozens or even hundreds, of small circular bodies about one quarter inch in diameter; these are stems, and they are enclosed in an ex-



Fig. 3. A cross-sectional view of one of the trunks, showing scores of the individual stems and the enclosing matrix of roots. About five-sixths natural size.

tremely dense matrix of thousands of minute roots. Before considering the structure of these stems in further detail, it may be of interest to note the methods that are employed, which enable us to understand their internal structure and mode of growth.

The fossils are petrified with silica, which has made them exceedingly hard, but in many cases the quality of preservation adequately rewards the labor of preparing thin sections for microscopic study. Two techniques are employed for the latter. Following the time-honored method, which has been used in paleobotanical work for about 125 years, a thin slice, a centimeter or two square, is fastened to a glass slide with balsam or a synthetic resin such as "Lakeside No. 70." It

is then ground until it is sufficiently transparent to allow study with transmitted light under a microscope, cleaned with alcohol, and covered with a thin cover glass. Aside from the labor and skill required for this process, the area that can be obtained for study is limited. It is true that a clever worker can prepare thin sections of some few square inches in extent, but the cost involved is generally prohibitive.

Fortunately we now have a method that enables us to obtain a thin section of a complete specimen regardless of its size — or, rather, limited only by the magnitude of our cutting equipment. In our own laboratory we employ an inexpensive circular diamond saw 20 inches in diameter and this will cut through specimens up to nine inches in diameter in ten to twenty minutes. In the case of a few larger specimens that were needed for study we engaged the services of a local stone monument cutting firm.

The cut surface is first ground to remove saw marks with No. 100 carborundum, then smoothed with No. 400 or No. 600. This surface is then etched for two to three minutes in hydrofluoric acid which has been diluted with equal parts of water to prevent fuming. The acid dissolves away the impregnating mineral, leaving the plant tissues standing slightly in relief. The surface is washed in a gentle stream of water for a few minutes and allowed to dry. The specimen is then placed in a tray of sand or gravel, and the etched surface is



Fig. 4. Such is the quality of preservation that in some cases even root hairs are well preserved: This shows one root with root hairs, highly enlarged.

leveled and then covered with a solution of parlodion dissolved in butyl acetate plus small quantities of a few other chemicals. Overnight this hardens to form a tough glossy film, which is pulled off with the aid of a razor; with it comes a thin section of all plant tissues that were exposed by the etching process.

This so-called "peel method" has many obvious advantages: It is much quicker than the grinding technique, it allows the preparation of serial sections, and the area to be sectioned is limited only by the size of one's cutting and grinding equipment. We have prepared very satisfactory peels of *Tempskya* trunks up to ten inches in diameter. The method has corresponding limitations. Unless the preservation is good, that is, unless there is a considerable amount of organic matter in the petrification (indicated by a dark, even coal-black, color) the resultant peel will be worthless or inferior to a ground section.

Such peels can be studied with a low-power binocular microscope or they can be mounted on microscope slides in the usual way for study at higher magnifications.

Considering one of the many individual stems composing a *Tempskya* trunk, you will observe that it consists essentially of a central pith region, a thin cylinder of wood, and an outer bark or cortex; and departing from the stem at frequent intervals are paired strands which represent the basal portions of leaf stalks. In most cases the latter depart from the side of the stem that lies closest to the exterior of the trunk. Each one of these stems divides frequently, some branches tending to pass out toward the side of the trunk and others extending upward, thus resulting in increase in both girth and height. Many of the branches, however, soon ceased growth, which prevented their development in excessive numbers. Lastly, each stem gave off hundreds of minute roots which, filling in the space between stems, resulted in a trunk that must have had a very tough, ropy nature.

We do not know what the earliest stages in the development of a young plant looked like but there can be little doubt that it originated as a single-stemmed trunk with a very few leaves. This stem soon forked and the resultant divisions became unified into a trunk by the many small, wiry roots. Later, probably when the plant attained a height of two or three feet, the stems in

the lower part of the trunk began to decay away, their place being taken by roots. It is the case at any rate that in large plants, those of eight to twelve inches in diameter, the lower foot or two of the trunk consists entirely of roots — a most anomalous situation in which we have a "stem"



Fig. 5. Foliage of a fossil fern, *Anemia Fremonti*, from the Cretaceous rocks of southwestern Wyoming, which is closely related to the modern pine fern of the Florida Keys. Foliage similar to this may have been borne by the *Tempskyas*.

(trunk) consisting, in the basal region, entirely of roots! Although it is not possible because of their minute size to trace an individual root for any distance it seems probable that the stems higher up maintained direct connection with the soil through these roots. However, in view of the ropy nature of the trunk, we may suppose it held a considerable reservoir of rain water which could be drawn upon as needed by the respiring foliage.

There are many curious features of these plants, some of which we understand and others that remain to be solved, but not all of them need concern us here. A few notes concerning the foliage may be of interest from the standpoint of the *Tempskyas* as well as other techniques involved in paleobotanical investigations.

It is appropriate first to say that we have not found foliage attached to the petrified trunks. We do know that the leaves were very small, this being evinced from the minute size of the leaf bases as they depart from the stems, and this small

size was compensated by large numbers, with a distribution along some length of the trunk, instead of merely at the top as in modern tree ferns.

The foliage shown in the accompanying illustration came from the Frontier formation in southwestern Wyoming, very close in age to that



Figs. 6 and 7. The *Anemia* fronds bore at their base two fertile branches, one of which is shown at the left. At the right is a more highly magnified subdivision. The black bodies consist of a cluster of small unrolled leaflets. When such specimens are properly treated (see text) they unfold to reveal paired rows of spore sacs.

of the rocks from which we collect the Tempskyas. It may have been borne by these tree ferns, but of that we are not sure. At any rate, it is probably similar in size and form to the Tempskya foliage, and it will serve as a representative example of the methods applied to studying such fossils.

This foliage was first described by DR. F. H. KNOWLTON about thirty years ago from specimens that had been collected by CAPTAIN JOHN FRE-

MONT on one of his western expeditions during the early 1840's. The fossils were named *Anemia Fremonti* in honor of the explorer. The present author visited this locality a few years ago and was fortunate in finding the fertile or reproductive portions of the fronds. A complete specimen, representing one of the lower branches of a leaf, is shown in FIGURE 6, and one of the mature subdivisions, somewhat enlarged, is shown alongside. The latter may be observed to bear in turn short side branches, each of which appears to have one or two bean-like bodies, and indeed we were at first inclined to think that these were seeds.

Although this appears to be an impression of the plant in the rock, it is in fact a compression, representing the organic matter of the flattened and partially coalified frond. Such compressions can best be studied by first removing them from the rock, a procedure that is accomplished as follows: The rock is trimmed to as small a size as possible, or suitably small specimens are chosen; the surface bearing the fossil is then coated with the same peel solution described above and allowed to dry. The entire specimen is then placed in a wax container with hydrofluoric acid for a few days, or until the rock is completely dissolved away. This can be accelerated by changing the acid once a day and carefully scraping away the dissolving rock with a scalpel and camel's hair brush. Depending on the thickness and nature of the specimen, this will take from two days to a week. At the end of this time the plant compression will be left adhering to the parlodion film, neither of which is affected by the acid. In the case of our *Anemia* specimens, we next cut off small portions and immersed them in strong nitric acid and potassium chlorate, and in the course of a minute or two the bean-like bodies opened up, revealing the fact that each one actually consisted of a few small inrolled leaflets. On the under side of a leaflet were two rows of spore sacs, each containing about one hundred well-preserved spores.

It is only in very fine-grained shales that we can expect to find such minute details well preserved, and they are not as abundantly encountered as one might wish. From Upper Carboniferous rocks in southern Illinois we have obtained very early ancestors of these Cretaceous *Anemias*, with their sporangia and spores well preserved, as well as the delicate epidermal hairs that grew along the leaf stalks. It is interesting to note,

moreover, that the modern derivatives of this long line of fern evolution live today in sink holes along the Florida Keys.

We are indebted very largely to English and Swedish paleobotanists of the past three decades for the development of these techniques, which have so vastly increased the amount of information that we may now extract from fossil remains. When it is considered that it is only within the past twenty years that they have been widely used, it will be realized that much may be expected of the future.

We are beginning to locate vast quantities of well-preserved petrified plants in the central coal fields that should contribute tremendously to our knowledge of the Coal Age floras. Already the work of Professor RALPH CHANEY and his students in working out the succession of floras and climatic changes along the west coast region stands as a classic of paleobotanical research, and should lead the way to similar studies in other areas and ages.

There is much that remains to be learned of the origin, development, and past distribution of the varied groups of plants of our modern flora. At

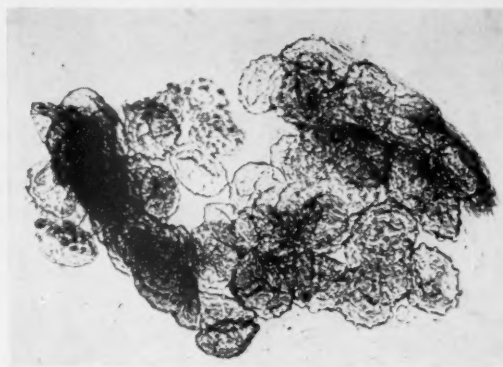


Fig. 8. When a single spore sac is treated so as partially to dissolve away the wall, the contained spores may be clearly seen. This is from a Coal Age fern related to the Wyoming *Anemias*. Highly enlarged.

best, the fossil record is fragmentary, and obviously the story will never be completed; but we have excellent prospects of obtaining in future decades a much broader understanding of the plant kingdom than we now possess.

JEEPS IN THE FIELD

The efficiency of the Agora Excavations has been greatly increased by two jeeps and six trailers purchased from the Army.



In 1946 the American School of Classical Studies at Athens purchased two jeeps and six trailers from Army surplus. These vehicles have been of the greatest service to the School in many different ways. They are used about town for personnel transport and for carrying light loads. They are used for visiting archaeological sites outside of Athens where the roads are always bad and frequently very bad and on which the ordinary car, if it could pass at all, would break up in a short time.

Most important of all, it has been found that the jeep and trailer combination can be used as a light dump truck in the School's excavations. During the 1947 season in the Agora over 10,000 tons of earth were moved by the jeeps and trailers. With its accessory, the standard trailer, the jeep can serve all the transportation needs of an archaeological expedition.

The following pictures illustrate some of the ways in which the School has put these vehicles to work. — EUGENE VANDERPOOL.

The standard trailer can readily be converted into a small dump truck by cutting out the back end. The end piece is then fitted in place with two pins and two hooks and eyes so as to be easily removable.



One jeep can easily serve three trailers,

hauling one to the dump while the others are loading.



The trailer is easy to load,

easy to hook up,





easy to dump,

and, when empty, it can readily be wheeled into position by one man.



Jeep and trailer can get into tight corners

and climb steep grades.



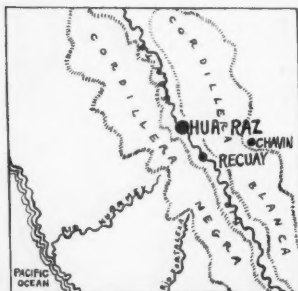
The jeep can even haul a string of light decauville railway cars,



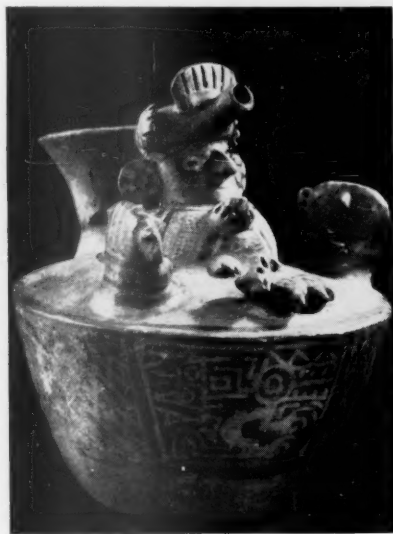
while for reconnaissance work and for visiting remote sites, the jeep is invaluable.

THE CALLEJON DE HUAYLAS OF PERU AND ITS MONUMENTS

By Richard P. Schaedel



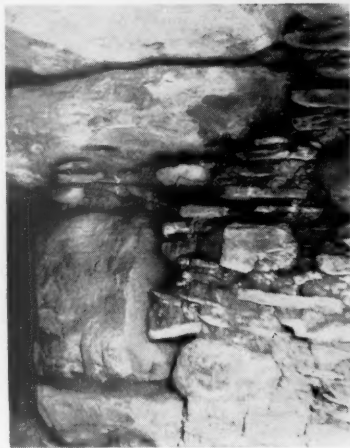
The Callejon de Huaylas is the narrow corridor which separates the Cordillera Negra of Peru from the Cordillera Blanca. Scattered about the mountainsides are some two thousand monolithic sculptures such as those shown on the following pages, familiar sights to anyone who strays from the highway in this picturesque valley.



Above, left: This monolith proves upon examination to be a warrior with his legs crossed and a shield in his left hand. This familiar motive in Callejon de Huaylas sculptures probably represents the "Guardian of the Fields."

Above, right: A typical vase of the Callejon. On the base is the famous "Recuay kitty," which museologists are wont to call "Mickey Mouse."

Left, right: Types of construction in the Callejon are numerous and varied. These views show aboveground and subterranean structures characteristic of the region. Although the monuments may extend further back, the ceramic evidence indicates that this culture flourished between c. 500 and 1200 A.D.



PREHISTORIC PERU: REPRESENTATIVE SCULPTURES FROM HUARAZ



Photo Guillen, Lima

Above: A favorite architectural adornment of pre-Incaic temples in the Huaraz region is the puma-head.

Right: This statue and the next show the Huarasino sculptor at his best.



Left: Many explanations of this disagreeable pose have been offered. Most logical: It represents the typical squatting position of the Indians, then as now. Most Freudian: It reflects a predisposition toward phallic emphasis. Most intriguing: The models were cold.

Below: Another frequent embellishment of the constructions in the Callejon de Huaylas is the relief slab, always with its complement of pumas. The triptych arrangement, as seen in this example, is quite characteristic.



Photo Guillen, Lima



Photos Guillen, Lima

THE "ROGUES' GALLERY" IN THE STONE MUSEUM OF HUARAZ

Above: Representative specimens of three types of Huaraz sculpture. The prominent chin of the figure on the left has led more than one critic to fancy a resemblance to Mussolini.

Right: A group of figures in their cramped quarters in the Huaraz Museum, which probably houses the densest population of monoliths in the world.



Photo Guillen, Lima



Left: A cura with one of the least envied hobbies known to man: Dr. SORIANO INFANTE of Huaraz, who has traveled on foot and horseback throughout the large department of Ancash in his eager search for more monoliths. Here we see him proudly beside one of his prize specimens as it waits by the road to be hauled to the Museum to join its fellows.

ON THE EASTERN SLOPES OF THE CORDILLERA BLANCA LIES CHAVIN DE HUANTAR, ONE OF THE EARLIEST SITES OF THE PERUVIAN SIERRA

Right: This sculptured plaque adorns the ruined wall of the famous white-walled Ca  tillo of Chavin. Recent floods have almost destroyed the handsome edifice, and have covered or washed away the intricately carved stela   which have been Chavin's glory.



Below: The Raimondi stela, named after the famous geologist by whom it was discovered. It was brought to Lima many years ago, where—according to custom—it stimulated, first, many speculations as to its affiliation, and, later, scientific investigation. It represents an anthropomorphized feline deity, with a plumed headdress, holding two staves.



Below: The only remaining head tenon, near the point of its insertion in the wall of the Ca  tillo. As a result of excavations here and in related sites on the north coast of Peru and in Cajamarca, the Chavin culture can be dated relatively at A.D. 1 to 500, the earliest ceramic-making culture of Peru.



Photo Guillen, Lima



Left: Two felinized heads. Much speculation has been devoted to the problem of how stonework of so comparatively early a period could have developed into such a complicated and elaborate style. From examples of Chavin goldwork, it seems rather likely that the style was developed in this medium, and transferred from gold to stone.

FRAGMENTS OF STONE- WORK FROM CHAVIN



Photo Guillen, Lima

The figure on the left represents a stylized condor head, that on the right a mortar with Chavinoid motives. The motives of Chavin art are widely diffused, and the interpretation and significance of this has led to one of the greatest controversies in Peruvian archaeology. In subsequent articles we shall deal with the extension of Chavin influence and the mystery which this oldest sierra culture still guards: Whence did it come? Where did it go?

THE ARCHAEOLOGICAL PARK IN ISTANBUL

AT THE PRESENT TIME (MAY, 1948) THERE IS AVAILABLE FOR ARCHAEOLOGICAL exploration a great area laid off by HENRI PROST, official city planner of Istanbul, which he has termed the "Archaeological Park." This includes Seraglio Point and the area bounded by Haghia Sophia, the Hippodrome, the sea, and Little Aya Sophia.

Within this area is the ancient acropolis of Byzantium, founded in 667 B.C. by Byzas and other Greek colonists from Megara, to which site Constantine the Great transferred the capital of the Roman Empire early in the fourth century A.D., thus founding New Rome, the City of Constantine — Constantinople — which preserved Greek and Roman culture, and, by the absorption of Asiatic elements, created the Byzantine civilization while Western Europe was engulfed in the Dark Ages. It was also the center and preserver of the new Christianity, while barbarian hordes swirled about its walls, presenting a lone and shining outpost in a dark and troubled world.

Never since Constantinople was dedicated by Constantine the Great "to the service of Christ" in 330 A.D. has there been presented so vast and important an opportunity for archaeological study of this almost untapped field, the historic and cultural resources of which are incalculable. For 2600 years since the time of Byzas, the central portion of the original city has been occupied by fortifications or buildings. Now a destructive fire has laid waste the wooden structures over this great area, making it possible for a limited time to explore the rich Byzantine and pre-Byzantine remains below the surface. Time is of the essence, for the area cannot be preserved indefinitely and, in the absence of active prosecution of the effort, buildings will again begin to encroach.

The stupendous opportunity to reveal and elucidate Byzantine civilization offers also a special and splendid field for international cooperation in this project. The French Academy has voted unanimously expressing its hope for the fulfillment of the plan. The British already have excavated on the site of the Palace of Theodosius near the Sultan Ahmet Mosque, they have an Institute of Anglo-Turkish Archaeology in Constantinople, and they have recently established a small school designed for archaeological research and to train Turkish archaeologists by work in the field. The Turkish Government, through its Minister of Education, has offered the aid of its scientific institutes and other organizations. It is unlikely that the world will again for generations see such an incalculably important opportunity in this field.

THOMAS WHITEMORE
Director, The Byzantine Institute

ON THE FOLLOWING PAGES ARE REPRODUCED M. PROST'S PLAN OF THE PROPOSED ARCHAEOLOGICAL PARK AT ISTANBUL, AND PHOTOGRAPHS OF THREE TYPICAL BYZANTINE MONUMENTS IN OR NEAR THE AREA.

ISTANBUL

EXTRACT FROM TOWN-PLANNING PROJECT ESTABLISHED BY MEM. PROJ. IN COLLABORATION
WITH ENGINEERS AND ARCHITECTS OF THE İNAN BÜROSU OF İSTANBUL (1934-1937)

THE ARCHAEOLOGICAL PARK SHALL OCCUPY THE SURROUNDINGS OF TOP KAPU SARAY
AND THE SITE OF A DISTRICT OF THE CITY PARTLY DESTROYED BY FIRE, BOUNDED BY ST SOPHIA, AT MEIDAN,
THE SEA AND THE LITTLE ST SOPHIA.

THE PRINCIPAL MONUMENTS SUCH AS ST SOPHIA, SULTAN AHMET, ST IRENE, SOKULLU-MEHMET-PASA, ETC.

WILL EMERGE FROM THIS AREA AFTER THE APPROACHES OF THE GREAT CIRCUS HAVE BEEN CLEARED AWAY.

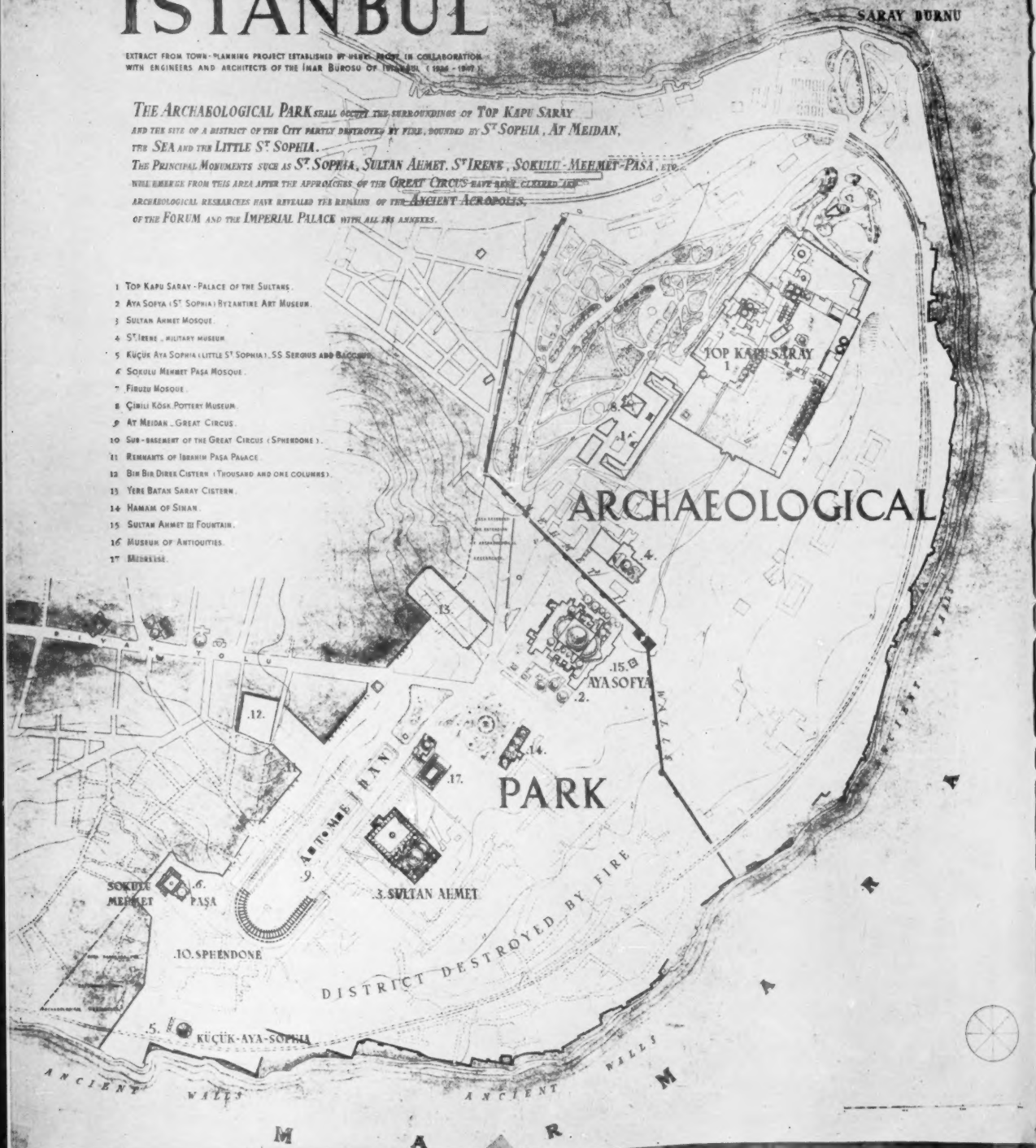
ARCHAEOLOGICAL RESEARCHES HAVE REVEALED THE REMAINS OF THE ANCIENT ACROPOLIS,

OF THE FORUM AND THE IMPERIAL PALACE WITH ALL ITS ANNEXES.

- 1 TOP KAPU SARAY - PALACE OF THE SULTANS.
- 2 AYA SOPHA (ST SOPHIA) BYZANTINE ART MUSEUM.
- 3 SULTAN AHMET MOSQUE.
- 4 ST IRENE - MILITARY MUSEUM.
- 5 KÜÇÜK AYA SOPHIA (LITTLE ST SOPHIA) - SS SERGIUS AND BACCHUS.
- 6 SOKULLU MEHMET PASA MOSQUE.
- 7 FİRİNGİ MOSQUE.
- 8 ÇİMLİ KÖSK POTTERY MUSEUM.
- 9 AT MEIDAN - GREAT CIRCUS.
- 10 SUB-BASEMENT OF THE GREAT CIRCUS (SPHERDONS).
- 11 REMNANTS OF İBRİHİM PASA PALACE.
- 12 BİN BİR DEREK CİSTERN (THOUSAND AND ONE COLUMNS).
- 13 YERİ BATAN SARAY CİSTERN.
- 14 HAMAM OF SİNAN.
- 15 SULTAN AHMET III FOUNTAIN.
- 16 MUSEUM OF ANTIQUITIES.
- 17 MESEKİŞE.

ARCHAEOLOGICAL

PARK



THE ARCHAEOLOGICAL PARK AT ISTANBUL

Left: M. HENRI PROST's plan of the proposed Archaeological Park at Istanbul. Important buildings are identified by numbers in the key provided on the plan.

Right: The pentagonal tower (Mermer Kule) at the southwestern extremity of the sea wall of Constantinople, on the Sea of Marmara, near the Golden Gate. Typical of the defences of the city, this four-storied tower illustrates the massive construction of the Byzantine period. (Sebah and Joaillier photo)



Right: The southwestern end of the Hippodrome, constructed by the Roman Emperor Septimius Severus (193-211) for the city of Byzantium, which was the forerunner of Constantinople. When Constantine the Great (306-337) founded his new capital, the Hippodrome became one of the principal features of the center of the city, being adjacent to the Augustaeum (the principal square), the Baths of Zeuxippus (also built by Septimius Severus), the Church of St. Sophia, and the Imperial Palace. The curved end ("sphendone") of the Hippodrome, shown here, was built up artificially because the ground at this end of the course sloped away from the remainder of the site. The race course itself is now a park, the At-Meidan, and contains the Serpent Column, the Obelisk of Theodosius, and the Egyptian obelisk, which mark the spina or division which separated the two sides of the track. (Byzantine Institute photo)



Right: Church of the Theotokos Pammakaristos (the All-Blessed Mother of God), overlooking the Golden Horn from the Fifth Hill (view from the southeast). Founded in the eleventh century, the church was subsequently enlarged. After the Turkish conquest of Constantinople, in 1453, this church, being situated in the part of the city which was still inhabited by Greeks, supplanted the larger Church of the Holy Apostles as the cathedral of the Greek patriarchs, who had their official residence in the adjoining monastery. During the reign of Murad III (1574-1592) the church (supposedly because of its fine situation) was converted into a mosque, called the Fetih Cami (Mosque of Victory), and the triangular projection in the eastern wall is a Turkish apse added to the original building. (Sebah and Joaillier photo)





Stone Circle in the Orkney Islands

British Information Service

BRITISH ARCHAEOLOGY IN 1948

A SURVEY

By Jacquetta Hawkes

BITAIN HAS NOT SEEN A POST-WAR SPURT IN excavation. During the war years, digging was inevitably limited to rescue work on threatened sites; now it is held in check by the shortage of labor and its high cost. Excavation is going on, of course, but on a much smaller scale than before the war, even though full use is being made of student and other voluntary labor. This slowing of the tempo of new discovery is not altogether regrettable, for it provides a respite for stock-taking and the planning of future work. New facts piled up so fast, during the great period of archaeological expansion between the wars, that their interpretation was often incomplete and the direction of research sometimes haphazard. Now there is time for prehistorians to use the air survey method in the theoretical field, that is to say, to get far enough above the details of their subject to distinguish its larger outline.

It is well known that several leading British

archaeologists are working on monographs that will be definitive for their particular subjects and periods. More significant still, the Council for British Archaeology has just published a substantial handbook, *A Survey and Policy of Field Research in the Archaeology of Great Britain*, that provides an authoritative summary of the present state of knowledge together with recommendations for future lines of research. Though severely condensed, it is probably the clearest statement that has ever been made, and some account of its findings, reinforced by references to current excavation and publication, will provide the best possible survey of the contemporary scene in British archaeology.

Eoliths

To begin, as is fitting, with eoliths. A truce has been called in the long battle that has been waged over these supposed earliest surviving

human artifacts. Nothing has been settled, except that nothing can be settled. Men must have been making use of stones before the recognizable industries were developed, and must have adapted them roughly to their needs. But this work was inevitably so rough that it is impossible to distinguish it from that of all the natural agencies, ice, floods, landslides, that can fracture stone in such a variety of ways. Judgment in the case is, then, that there must be "eoliths," but that they can never be certainly identified unless some day they are found by a hearth or with chopped bones or in any other context that would itself prove their human origin.

Palaeoliths

Coming to the Pleistocene and the Palaeolithic proper, recent studies both by archaeologists and geologists have cleared up old problems and revealed new ones. Much has been learnt, for instance, about the Acheulean core, and the Clactonian flake cultures, but the story of their subsequent mingling, so important for our understanding of the emergence of *Homo Sapiens*, is still obscure. Perhaps the most important single problem here is the source of the Levalloisian, a flake culture that still has evident Acheulean affinities.

For the fully developed hunting civilization of the Upper Palaeolithic, Britain's position in relation to continental events has been clarified. While it missed the initial Chatelperronian and cannot have been reached by more than occasional hunting parties of Magdalenians, in between these two limits the true Aurignacian (Middle Aurignacian) and the Gravettian cultures were both well established.

Mesoliths

As for the Mesolithic period that followed, as forests spread across Europe in the wake of the retreating ice, a similar clarification of cultures has proved possible, but it is unfortunate that no bog or other site suitable for the preservation of perishable materials has as yet been discovered. Thus Britain lacks the vivid knowledge of the life of these food gatherers of the forest fringes that exists for their kinsmen in Scandinavia.

Neoliths

The Neolithic Age introduces with full force a recurrent problem of British archaeology. When Britain was isolated and invasions had begun, what exactly was the nature of the impact of the newcomers on the native population? In this period it assumes a particularly dramatic form, for it concerns the imposition of an entirely new way of life, that of the mixed farmer, upon a primitive hunting economy. Much more work is needed, but it seems that those earliest farmers, the Windmill Hill people, who invaded Britain in about 2500 B.C. and began to settle the uplands, had little effectual contact with Mesolithic survivors.

It was otherwise with the Peterborough people, who represent the second main cultural tradition of Neolithic Britain. The continued importance of hunting and fishing in their economy, and the survival of several Mesolithic forms among their tools and weapons, show that they were strongly affected by their predecessors. Indeed, they must have been descendants of the native Mesolithic stock, probably reinforced by further immigration across the North Sea.

Bronze Age

Understanding of the Early Bronze Age was growing fast, immediately before the war. Not only had the earliest Beaker invasions of Wessex been distinguished from the related movement into Kent and the rather later Beaker penetrations of the East Coasts, but a further, invasion of outstanding importance was recognized for the first time. A warlike, pastoral people moved into southern England, where their superior equipment helped them to dominate and exploit the population and to establish their own Wessex culture.

This was the last of the Early Bronze Age incursions; it was followed by a period of racial and cultural mingling. While north of the Thames the Beaker conquerors seem to have intermarried with the Peterborough natives to produce the distinctively British Food Vessel culture, in southern England the Wessex overlords, mingling with Beaker and earlier native elements, were to give rise to what became the characteristic Middle Bronze Age culture of the whole of Brit-

ain, that of the so-called Urn Folk. While these outlines may be more or less correct, they are flimsily drawn; there is need for much more evidence to establish them — to say nothing of an equally urgent need for greater knowledge of the modes of life in a period whose domestic remains are at present absurdly scanty.

Post-War Excavations

Already before the war excavation at a number of the stone and wood circles that are the principal sacred sites of the Bronze Age had thrown light on the religious observances of the time. Now these earlier digs, at Stonehenge, Avebury,



British Information Service

Ornament in La Tène style on Iron Age horse armor.

Woodhenge, Arminghall, and Bleasdale, have been followed by two post-war excavations. One, at Dorchester, near Oxford, was interesting in that it proved that wood circles might be raised by Neolithic (Windmill Hill) peoples even if Bronze Age in absolute date.

The second, which occupied two seasons at Cairnpapple in West Lothian Scotland, has proved to be far and away the most exciting dig of 1948. This is the story, a story that covers almost the first thousand years of the Bronze Age. The oldest features were a setting of stone uprights, perhaps horseshoe-shaped in plan, like the innermost settings at Stonehenge, and an oval of similar uprights enclosed by a bank and ditch. A Beaker burial lay against one of the stone-holes of the

oval, while, against a still standing member of the horseshoe setting, a most remarkable interment was uncovered. In a very large grave a man had been laid at full length with one beaker at his head and another at his feet. A massive wooden club seems to have been placed at his side, while fragments of carbonized wood over the face suggests that he may have been buried wearing some kind of ceremonial mask.

Later, the site was transformed and became wholly funerary. The stone uprights appear to have been pulled up and used to form the sill of a cairn some fifty feet across to cover a cist of stone slabs. This cist had contained an inhumation burial with a Food Vessel carefully standing on a ledge above the body.

Last stage of all, the size of the cairn was doubled and in the extension two Middle Bronze Age Urn Folk were interred in their characteristic cremation urns. Cairnpapple thus beautifully confirms the accepted Bronze Age chronology, and is proof of the long-continued sanctity of these sacred sites.

A related type of monument that has been the subject of new discoveries is that most familiar of all British field antiquities, the round barrow. In the nineteenth century, it was the frequent victim of amateur antiquaries in search of plunder for their private collections. These enthusiasts were concerned only to reach the grave goods in the least possible time, but now that the whole mound is meticulously dug all kinds of unexpected features are being brought to light. The barrows have been found sometimes to cover ritual circles of posts, sometimes specially constructed "houses of the dead" or even the remains of real huts. There is no question that more evidence of this kind for ritual practices of the Bronze Age will be discovered, as further barrows are dug or re-examined.

Iron Age

The Iron Age is too complex and specialized a subject for full treatment here. It is just this complexity that makes it desirable, as Survey recommends, that it should be given intensive study regionally. The piling up of Hallstatt upon latest Bronze Age, of many separate incursions of peoples of La Tène culture, and finally of two extensive Belgic invasions, produced a more compli-

Iron Age Huts in Cornwall



British Information Service

cated cultural patchwork than that of any other period in British prehistory. Here again the first necessity is for a closer study of the modes of life of the various Iron Age peoples.

There is work to be done, for example, on the Celtic field systems, particularly on the supposed introduction of long strip fields by the Belgae, and on the relation between groups of fields and farms or villages. The complete excavation of sites has in the past been too rare. No other method effectively reveals the habits, social life and economy of a community. This was well shown at Little Woodbury, Wiltshire, where almost complete excavation not only made it possible to reconstruct an Iron Age farmstead but proved that many similar sites hitherto assumed to be villages were in fact isolated farms.

The Meare Lake Village

Another site to have been totally excavated is the Meare Lake Village, Somerset. Although the dig itself is an old story, the publication in 1948 of a first report on the village is a welcome event. The great value of Meare and the neighboring lake settlement of Glastonbury lies in the

preservative qualities of the wet peaty soil in which they were engulfed.

The survival of wood, basketry, and bone makes it possible to form an intimate picture of the life led by these villagers in the round huts that they built on artificial islands. We know that they were skilled carpenters and weavers, had considerable trading interests, and above all were possessed of that mastery in decorative design characteristic of their La Tène culture.

If any generalization can be made about the future policy of British archaeology, it is that it will come more and more to concentrate on the study of the changing modes of life in prehistoric times. For over fifty years archaeologists have struggled to build a rough chronological framework for prehistory, where, before, all was ignorance or fantasy. It is still far from perfect, but the frame is now strong enough to bear a much greater weight of information about the economic, social, and religious life of the prehistoric communities. Interest is already shifting in that direction, and it is safe to prophesy that it will be the main preoccupation of archaeology for the next twenty years.

PREHISTORIC GREEK SCRIPTS

By George E. Mylonas

George E. Mylonas is a native of Smyrna, a graduate of the University of Athens and the Johns Hopkins University, a former secretary of the American School of Classical Studies at Athens, a veteran of numerous excavations (Olynthus, with David M. Robinson; Eleusis, with Kourouniotes; Hagios Kosmas; Akropotamos, with Bakalakis), and a thoughtful student of prehistory. He is now chairman of the department of History of Art and Archaeology at Washington University, St. Louis, and an Associate Editor of ARCHAEOLOGY.

The drawings which illustrate this article were prepared by Mr. Wilbur Rosvall, of the School of Architecture, Washington University. Illustrations adapted from Sir Arthur Evans' Palace of Minos at Cnossos are reproduced by permission of The Macmillan Company, publishers.

OF THE DISCOVERIES MADE BY MAN IN HIS long career on our planet, and they are many and awe-inspiring, few surpass in interest and in importance his invention of the art of writing. To be able by means of twenty-four or twenty-six characters to communicate to others our deepest thoughts, our strongest emotions, and our innermost desires, is an achievement that borders on the miraculous. Ages of effort lie behind this achievement, for man devoted to it his ingenuity ever since he realized the possibilities of his intellect. The drawings, painted on the walls of the cave in the dawn of consciousness to satisfy perhaps a religious need, were gradually followed by pictures painted on rock and tablet meant to convey to others simple facts and ideas. Thus, with the passing of centuries, pictographic scripts were developed by man in the various parts of the world.

Our own alphabet, which has a long and noble life-history, can be traced back to such a picture-writing developed by the people beyond the eastern basin of the Mediterranean Sea. It is generally known that the Greek alphabet, out of which our own was derived through the intermediary Latin, was based on the Semitic. It was borrowed by the enterprising Greeks from the sea-roving merchants of Sidon and Tyre, perhaps in the ninth century B.C. Herodotos, the Father of History, tells us how Kadmos introduced into Greece the Phoenician letters. *Recent investigations, however, have proved that a script was in use in Greece long before the Semitic characters were adopted by her historic inhabitants; a script that was in no way related to the historic Greek alphabet; a*

script that to date has baffled scholars and has defied decipherment.

Vague rumors for the existence of such a script were preserved in the writings of ancient authors, but these were either overlooked or misinterpreted. In the famous story of Bellerophon, as related by Homer (*Iliad*, 6.168 ff.), we find the earliest mention in literature of letters and writing. Proetos, the king of Argos and the Greek counterpart of the Egyptian Potiphar in the story of Joseph, enraged by the story of his wife, planned the destruction of Bellerophon. Not wishing to do the killing himself, he gave the hero a sealed tablet containing "baleful signs," a written request to the king of Lykia to put Bellerophon to death. Here we have clear evidence for the existence of a script in the mythical days of Proetos. Yet scholars saw in it "precisely the attitude of an illiterate people which has heard distant echoes of the art of writing practiced elsewhere further east or perhaps in Greece in earlier ages," and thus suggested the illiteracy of the prehistoric world.

Again, Plutarch described how in a grave near Haliartos, reputed to be that of Alkmene, was found a bronze tablet covered with characters which neither the Greek nor the Egyptian learned men could read, a tablet inscribed apparently in a prehistoric script. This tablet was also forgotten and the story was considered as a myth without substance. With equal disbelief was treated the accidental discovery at Knossos of some inscribed tablets in the 13th year of Nero's reign, i.e., 66 A.D., brought to light by an earthquake; tablets which at the command of Nero were interpreted

as the diary of the Knossian Diktys, a follower of Idomeneus and a participant in the expedition against Troy.

First Indications

Even after the excavations of SCHLIEMANN brought to light an entire new world, the world of the Mythical Age of Greece, even then scholars persisted in their views, because the great excavator failed to bring to light any written documents. It was only in the years which followed SCHLIEMANN's great discoveries that sporadic finds began to indicate the possibility of the existence of a prehistoric script in Greece (FIGURE 1). Thus in 1889 a stone pestle from Mycenae was published, bearing on it a single incised sign. In 1890 TSOUNTAS found in one of the chamber tombs of Mycenae two amphorae on the handle of one of which were incised three signs. Similar signs were found on two amphorae from the tholos tomb of Menidi, near the ancient deme of Acharnae of Athens. In a grave near the modern city of Nauplia, STAES found in 1892 a Mycenaean

since the Early Bronze Age, that such marks did not prove the existence of a script (FIGURE 2). Fate had reserved the discovery of such a script for SIR ARTHUR EVANS, whose successful search reads like a fascinating detective story.



FIG. 2. Early Helladic (Early Bronze Age) vase from Hagios Kosmas, near Athens, with an incised potter's sign.

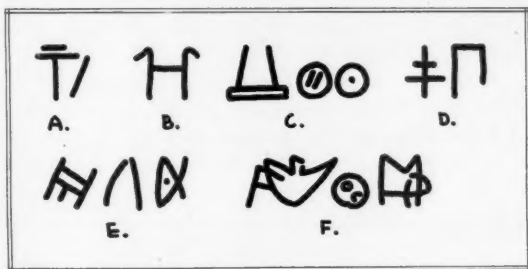


FIG. 1. Signs known before SIR ARTHUR EVANS' discoveries: A, on the stone pestle from Mycenae. B, on the vase from Nauplia. C, on the marble vase of Cythera. D, on the Menidi amphora. E, on the amphora handle from Mycenae. F, on the stone vase from Mycenae.

vase on the three handles of which a sign was inscribed, and on a stone vase discovered at Cythera he detected three inscribed characters. In the same year and at Mycenae a fragment of a stone vase was found bearing an inscription of four or five signs. In spite of all these scattered documents great scholars still clung to the belief of the illiteracy of the Mythical-Homeric Age of Greece. They could point out with reason that potters had been in the habit of placing signs on their pots ever

Island Gems and Milk Stones

It was in 1889 that the attention of SIR ARTHUR was drawn to the problem by a four-sided bead-seal of red cornelian, reported to have been found at Sparta, and given to the Ashmolean Museum by Mr. GREVILLE CHESTER. Each of the facets of this seal was covered with a series of figures which apparently belonged to a conventionalized system of picture-writing (FIGURE 3). Impressed by the possibilities of the seal, Sir Arthur determined to find out whether or not the seal was actually found at Sparta and whether or not more specimens could still be obtained in the Greek world. And so in the spring of 1893 we find him roaming all over Greece looking for seals with the mysterious figures. His search was more than successful. Not only did he obtain additional specimens, but he was also able to trace these bead-seals to the island of Crete. Indeed these

seals were widely known as "island gems" and they were plentiful since such were to be found in the collections of the Greek Archaeological Society and of the Berlin Museum. All the evidence indicated a visit to the island of Crete as the next stage in the exciting hunt for "island stones," and this materialized in 1894.

In the spring of that year EVANS visited the central and eastern section of the island and to his great delight kept finding more and more perforated seals proving that the "island gems" were at home in Crete. A happy piece of superstition helped preserve these gems for the scholar. It was generally believed that they were charms

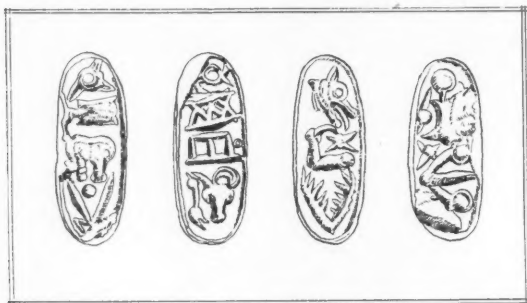


FIG. 3. Four-sided bead-seal of red cornelian in the Ashmolean Museum (EVANS, *Scripta Minoa*, Fig. 4).

of great virtue, especially helpful in times of child bearing. As a matter of fact, they were known to the islanders as "milk stones" and "milk producers," and so they were cherished and carefully hoarded. In the course of his first and his subsequent visits to the island (in 1895 and 1896) SIR ARTHUR EVANS was able to solve the mystery of the "island gems," and to prove that the signs engraved on them were characters of a script which was apparently used in the island long before the day when Kadmos brought the Phoenician letters to Greece.

The belief in the existence of such a script was strengthened when in 1896, in the Diktaean cave, the cave in which according to tradition Zeus was born, was discovered a fragment of a libation table, made of black steatite, bearing on its upper surface an incised inscription consisting of signs similar to those noted on the gems. The inscription on the libation table indeed seemed to prove that the signs belonged to a regular script and

were not mere drawings with a magic or other significance.

Palace of Minos

From those scattered monuments SIR ARTHUR EVANS was able to draw, in his usual remarkable way, the basic elements of the script used in the island of Crete in prehistoric times. And then, in the spring of 1900, he began his monumental excavations of the palace of King Minos at Knossos, known to us from Greek mythology as the Labyrinth. Seldom has an excavator been blessed with finds such as EVANS made at Knossos. As one campaign followed another the wonder of the world kept increasing at the character and the wealth of the objects being unearthed, and soon it became evident that the people who had lived in the island of Crete in the Bronze Age had developed one of the most brilliant prehistoric cultures our world has seen. It seemed indeed that the stories of Daedalos and Ikaros, of Talos and of the Thalassocracy of Minos, were not idle myths.

To this brilliant Bronze Age civilization SIR ARTHUR EVANS gave the name Minoan, and, based on its stratified remains, distinguished it into three main phases: Early Minoan (c. 3000-2200 B.C.), Middle Minoan (c. 2200-1600 B.C.) and Late Minoan (c. 1600-1100 B.C.). Among the architectural and other remains the spade brought to light a number of clay tablets, clay



FIG. 4. Pictographs on a grey steatite prism-seal from Praesos in Crete (EVANS, *Scripta Minoa*, Fig. 69).

sealings, labels, and seals covered with the signs of the prehistoric script of Crete. Similar finds were made in other Cretan sites excavated by American, British, Greek, Italian, and French scholars, proving that the knowledge of the art of writing was widely diffused in the island.

The life history of that script can be followed step by step, and for a period of almost a thousand

years. Since its documents were found in stratified areas, the various phases through which it evolved can be dated with comparative accuracy, and a sequence of that evolution can be definitely established. In spite of the paucity of evidence it

seems plausible to maintain that a picture-writing was developed in Crete perhaps in Early Minoan III and Middle Minoan I times (c. 2300–2000 B.C., FIGURE 4). The best examples of that script are to be found carved on three- and four-sided seals, as illustrated in our FIGURE 4.

Hieroglyphic Script

Out of such a picture-writing, and apparently influenced by the Egyptian script, was developed an advanced conventionalized pictographic script, the hieroglyphs of Crete, which became common in Middle Minoan II times (c. 2000–1750 B.C.). SIR ARTHUR EVANS has distinguished at least 135 signs belonging to this script (FIGURE 5), and to

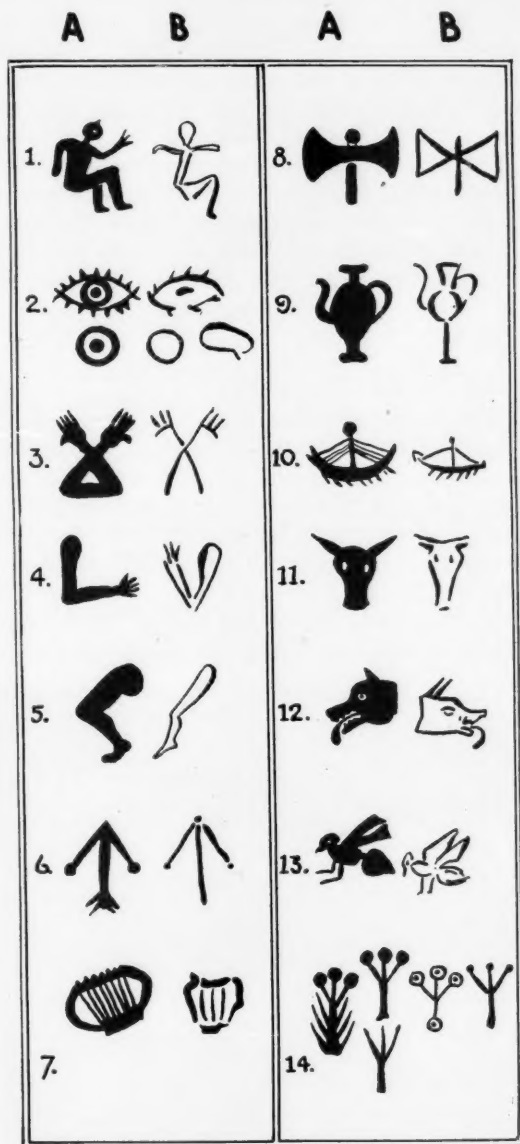


FIG. 5. Some hieroglyphic signs from Crete: A, engraved on seal-stones. B, incised on clay tablets and sealings. (EVANS, *Scripta Minoa*, Fig. 102).



FIG. 6. Clay bars and labels with Hieroglyphic Script (EVANS, *Palace of Minos*, Volume I, Fig. 208).

these must be added 15 more identified by CHAPOUTHIER from among the inscribed documents found at the palace of Mallia. The hieroglyphic signs, bearing still some resemblance to the objects which they represent, were carved on seals, but they were also incised or impressed upon bars of clay, on fiddle-shaped labels, and more seldom upon flat clay tablets that now for the first time make their appearance (FIGURE 6).

It is natural to find that the signs were given a cursive form when they were applied on clay documents, while they retained their decorative-naturalistic quality when they were carved on seals (FIGURE 7). By now a numerical system had been developed, and the inscriptions were arranged from left to right, although sometimes they seem to run alternately from right to left and from left to right ('boustrophedon').

Perhaps the most striking document of a conventionalized pictographic script is the clay disc

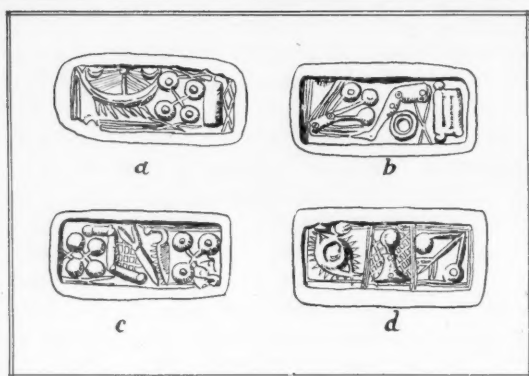


FIG. 7. Four-sided seal of chalcedony with hieroglyphic signs, in the Berlin Museum (EVANS, *Scripta Minoa*, page 155, P 27).

disc was "the product of people living in the Western coastlands of Asia Minor."

One of the first questions that comes to mind when we look at this or other similar documents is: what is the meaning of its inscription? Unfortunately as yet the document has defied decipherment. Many indeed are the ingenious explanations advanced by specialist and amateur alike, ranging from a religious hymn to a primitive musical score; the fact, however, remains that the real interpretation of the document is still forthcoming. The suggestion that the disc is the text of a treaty between the people of Crete and those of Asia Minor has found favor with a number of scholars.

Linear Script A

By the time the Phaestos disc was being inscribed (about 1700 B.C.) the hieroglyphic or conventionalized pictographic script of Crete fell into disuse and was superseded by a more advanced form of writing with fewer characters, which in the main are linear, recalling but little their pictorial antecedents. This third phase of writing in Crete, which was introduced at the beginning of Middle Minoan III times (c. 1750 B.C.), was

found by the Italian explorers on the acropolis of Phaestos and consequently known as the disc of Phaestos. It measures 17 cm. in extreme diameter and both its faces are covered with signs arranged in a spiral band proceeding from the outer rim to the center (FIGURE 8). This is the largest hieroglyphic inscription yet uncovered in Crete; it contains 241 signs, each of which was impressed on the clay separately by a punch or stamp. These signs are separated by vertical lines into 61 sign-groups or words. SIR ARTHUR EVANS has observed that of the 45 separate signs that are used in various combinations on the disc only 10 bear any resemblance to the Cretan hieroglyphs, and with good reason has concluded that perhaps the



FIG. 8. The disc of Phaestos.

called by EVANS 'Linear Script A.' Documents bearing this script have been found all over Crete, proving that the art of writing was widely spread and in use in Crete during those times. The popularity of the art is also attested by the fact that we even have graffiti on walls, and inscriptions

Cretan tradition maintained. The majority of the surviving inscribed documents, however, are clay labels and broad tablets (FIGURE 10), although



FIG. 9. Inscription written in pen and ink on the inside of a cup (EVANS, *Scripta Minoa*, Fig. 12).

written by pen and ink (FIGURE 9). This would further indicate that writing was applied in ink on less durable and perishable materials such as parchment, papyrus, even on palm leaves as the

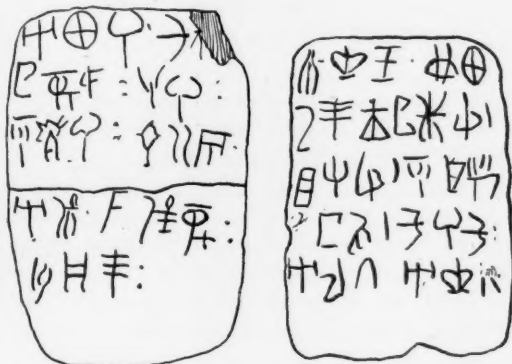


FIG. 10. Tablets of clay from the palace at Hagia Triada, inscribed in Linear Script A (EVANS, *Scripta Minoa*, Fig. 13).

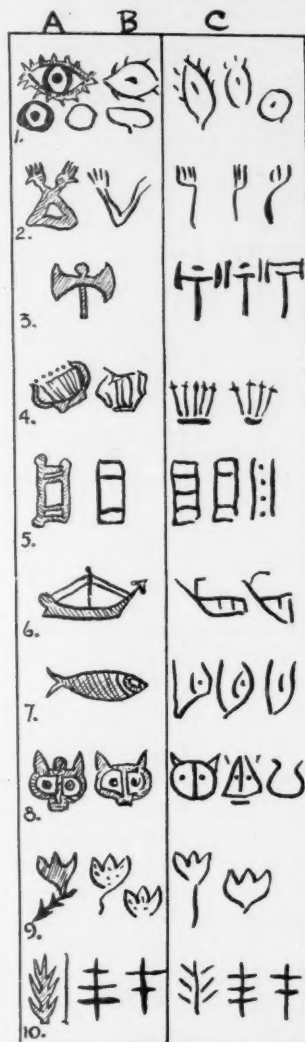


FIG. 11. Comparative table of a limited number of signs. A, B, Hieroglyphs; C, Linear Script A (EVANS, *Palace of Minos*, Volume I, Fig. 477).

inscriptions are also found on stone vases, ladles, and libation tables.

Linear Script A, containing at least 85 different signs, certainly developed out of the advanced pic-

tographic phase of the earlier age to which at least one-third of its signs can be traced (FIGURE 11). Beyond the central city of Knossos this script was in use almost to the end of the Minoan Age, but in that city it was supplanted in Late Minoan II times (c. 1450 B.C.) by another linear script known as 'Linear Script B.' This is funda-

LINEAR A	LINEAR B	LINEAR A	LINEAR B
ΑΑ	ΑΑ	ΠΠΠΠ	ΥΥΥΥ
ΑΑ	ΑΑ	ΖΖ	ΖΖΖ
ΕΕΕ	ΕΕ	ΥΥΥΥ	ΥΥΥΥ
ΗΗΗΗ	ΗΗΗΗ	ΚΚ	ΚΚΚ
ΘΘΘΘ	ΘΘΘΘ	ΑΑΑΑ	ΑΑΑΑ
ΙΙΙΙ	ΙΙΙΙ	ΟΟΟ	ΟΟΟ
ΛΛΛ	ΛΛΛ	ΝΝΝ	ΝΝΝ
ΞΞΞΞ	ΞΞΞΞ		

FIG. 12. Comparative table of a limited number of signs of Linear Scripts A and B (EVANS, *Palace of Minos*, Volume IV.2, Fig. 666).

mentally the same as Linear Script A, differing from it only in matters of detail; and this is easily indicated by the fact that only 10 new signs were added to the syllabary, but at the same time 20 signs of Script A were dropped (FIGURE 12).

Linear Script B

The material available for the study of Script B is plentiful, for at least 1600 tablets covered with it were discovered in the Palace of Knossos. Most of these tablets refer to business transactions and are inventories and lists of men and women. A small number may have been official documents with legal formulae and contracts. Some may even have been literary documents. In some of the business tablets we find a number of entries; in others a single entry was made. Such tablets with a single entry are illustrated in our FIGURE 13; they are known as the adze-tablets, apparently recording the giving or taking of adzes, and were copied from Miss KOBER's arrangement.

The topmost tablet has a complete entry which can illustrate the method followed by the Minoans in recording transactions.

At the beginning of the entry, at the left end of the inscription, we find three characters, larger than the rest, grouped together in a word that is usually taken to be a "heading" of some sort. That word is followed by three signs again grouped together in a word, which according to VENTRIS is the name of "the recipient or the supplier." Then we have the ideogram which stands for an adze or axe-head. Finally we have the numbers involved, indicated, in the regular numerical



FIG. 13. The "Adze" tablets of Knossos as restored by Miss A. E. KOBER (*American Journal of Archaeology* 48 [1944] page 74, Fig. 2).

system, by means of horizontal and vertical lines. It seems that we have in our tablet the record of a transaction involving 28 axe-heads.

Most of the tablets used were of an elongated type, some of them having a length of 24 cm. Their surfaces were carefully lined and often a summary of their contents was inscribed on their edge (FIGURE 14). This practice suggests that the tablets were placed together like books on a shelf and, like the latter, they could be identified easily by their title. The evidence proves that tablets of similar contents were filed together and were kept in wooden boxes and in regular archive

rooms. Often the clay sealings with which the boxes were sealed were found near the tablets.

Linear Script B contains at least 73 separate signs, each of which stands for a syllable, and a few ideographic characters. The latter are usually pictorial representations of objects referred to in the inventories, such as chariots, weapons, adzes, vases, olive trees, etc., and are to be found in such inventories. In ordinary use perhaps the syllabary may have contained about 62 signs as compared with 85 in Script A, and three-fourths of these seem to have a phonetic, syllabic value. In Crete, Script B was in use only in Knossos and, perhaps, as PENDLEBURY has suggested, it was a "scholarly writing taught to the Palace scribes."

Mainland Scripts

It is this Minoan Linear Script B that we find in the Mainland of Greece in the closing centuries of the Prehistoric Era. We have noted above that the early excavations of SCHLIEMANN and TSOUNTAS brought to light but few inscribed objects. Beginning with the year 1902, however, more and more inscribed articles began to be discovered in the various parts of the Mainland.

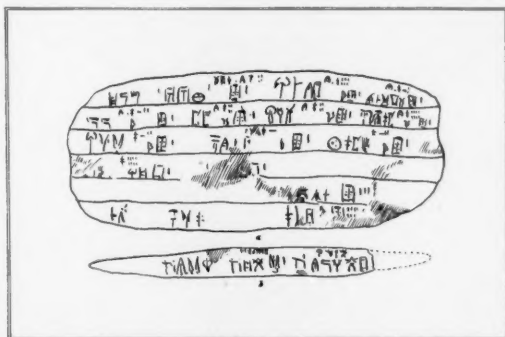


FIG. 14. Tablet from Knossos. A, inscription on tablet in Linear Script B. B, inscribed edge of tablet. (EVANS, *The Palace of Minos*, Volume IV.2, Fig. 682 a, b.)

BULLE's finding at Orchomenos of a stirrup vase bearing a painted inscription was followed by the remarkable discovery of KERAMOPOULLOS of some thirty inscribed vases in a storeroom of the "Palace of Kadmos" at Thebes. More vases of this type bearing inscriptions were found by the

excavators of Tiryns, and another example was discovered by KOUROUNIOTES in the sanctuary of Demeter at Eleusis (FIGURE 15). At the same



FIG. 15. Inscription on the false-necked amphora from Eleusis.

time the members of the Swedish excavations at Asine discovered on a fragment of a vase a long inscription in Linear Script B.

These scattered documents were sufficient to indicate that a script, derived from the Minoan Linear Script B, was in use on the Mainland as early as the thirteenth or fourteenth century B.C. The final proof was obtained in 1939 by the striking discovery of BLEGEN and KOUROUNIOTES of the remains of a Mycenaean palace at the site of the Homeric Pylos. In a narrow room of that palace a total of 618 tablets were found, 20 of which were intact, the others in a more or less fragmentary condition (FIGURE 16). The contents of the tablets seem again to be of a commercial nature, but their script is similar to the Minoan Script B. The Pylos tablets belong to the closing years of the thirteenth century, to about 1200 B.C.

Tablets of the same nature have not been found thus far elsewhere in the Mainland of Greece, but this, as BLEGEN has pointed out, may be accidental. And the scarcity of inscribed documents on the Mainland of Greece can be attributed to the fact that its people may have used more perishable materials than clay tablets in the recording of their transactions. We have seen how Proetos, the king of Argos, used a tablet, perhaps of wood, in sending his message to the king of Lykia; wood



FIG. 16. Tablet No. 213 from Pylos (reproduced by courtesy of Professor CARL W. BLEGEN of the University of Cincinnati).

might have been one of the materials used by prehistoric scribes. In this connection it may be interesting to note that in a much later period the laws of Solon were inscribed on wood. Bronze may have also served for this purpose. Tradition has preserved the discovery of a bronze inscribed tablet in the grave of Haliartos, and actual inscribed bronze tablets are known from Cyprus and from the Diktaean cave of Crete.

We have noted that the Linear Script used on the Mainland of Greece is similar to the Linear Script B of Crete. We have indeed a number of signs, at least 15, which are not to be found in the Minoan script and which seem to have been developed on the Mainland to take care of linguistic and phonetic peculiarities. But the majority of the Mainland signs, at least fifty-five of them, find exact parallels in the characters of the Minoan Script B. Perhaps the Minoan Script was introduced into the Mainland after the destruction of Knossos and of the other Cretan centers about 1400 B.C.

Cypriot Syllabaries

Beyond the Mainland of Greece and in the island of Cyprus we find a script employed in pre-

historic times. The recent studies of DANIEL have proved that the prehistoric Cypriot script was directly derived from the Minoan Linear Script A, and perhaps was introduced into Cyprus from Crete about 1500 B.C. As far as can be made out that script, known from some 185 inscriptions, contained at least 110 signs, of which only 12 are of local non-Minoan origin. Most of these have a phonetic-syllabic value. It is interesting to note that this prehistoric script fell into disuse after 1100 B.C.; but it re-appeared, apparently in a modified form, around 700 B.C. and, from that date until the first century B.C., it was used by the Greek-speaking islanders concurrently with the Greek alphabet. The Cypriot syllabary of the Historic Age was deciphered with the aid of bilingual documents and the syllabic value of its 56 signs is established (FIGURE 17). Scholars hope that this syllabary of the Historic Period will prove of great help in the investigation of the prehistoric scripts of Greece.

This will bring us to the last part of our quest, and to the statement that to date scholars have been unable to find the key to the Minoan and Mainland prehistoric scripts. Even now, after more than fifty years of research, it is impossible

to read and understand the Cretan tablets. This does not mean that scholars have not shown proper interest in the problem, that they have not devoted the necessary time to it. As a matter of fact, no other archaeological problem has drawn the attention of international scholars as much as the problem of the prehistoric scripts of Greece. SIR ARTHUR EVANS, the founder of Minoan Archaeology, even though no longer with us, heads a mighty list of scholars the world over who are giving their best to the problem. Among others we may name MARINATOS and KTISTOPOULOS for Greece, CARRATELLI for Italy, CHAPOUTHIER and CUNY for France, FORRER and WEICHBERGER for Germany, HRONZNY for Czechoslovakia, SUNDWALL for Finland, PERSSON for Sweden, SIR J. L. MYRES, VENTRIS, COWLEY, and GORDON for England, Miss KOBER, BLEGEN, DANIEL, HARLAND, and MYLONAS for America. As the list implies, the deciphering of the prehistoric scripts of Greece has developed into an international cooperative project.

In spite of all this expert effort devoted to them, however, they have remained a puzzle. And this perhaps is due to the fact that not only the system of writing was lost in antiquity, long before Christ was born, but also because the Minoan language, in which the great majority of the documents are written, no longer exists. As a matter of fact, not even the ancient Greeks knew what kind of language was used by the Minoans. We often assume that it is neither Indo-European nor Semitic, but there end our assumptions. And so the scholars have to face an unknown language recorded in an unknown script. This is an exploit

of immense proportions. We cannot, however, say that their work in the last fifty years has not resulted in definite achievement. Let us briefly review what they have accomplished thus far and what hopes the future holds for a complete solution of the problem.

We know that the prehistoric script of Crete

UNITS	I	III = 3
TENS	• OR —	≡ = 30
HUNDREDS	o	ooo = 300
THOUSANDS	⊕	⊕⊕⊕ = 3000
EXAMPLE		⊕⊕ ooo ≡ IIII = 2364
TOTAL	FX	
WOMAN SIGN		⋈
MAN SIGN		⋈
FEMALE CHILD		⋈
MALE CHILD		⋈

FIG. 18. Numerical system used in Prehistoric Greece (Linear Scripts A and B) and the few Minoan signs whose meaning is known. (After SIR ARTHUR EVANS.)

underwent four stages of development. These stages are known as Pictographic, Hieroglyphic, Linear Script A, and Linear Script B. The relative date of these scripts has been established and their documents have been properly classified. The signs belonging to each of these scripts have been collected and tabulated, and it has been proved that most of the signs of the Linear Scripts are syllabic; a few are ideograms, used to indicate the content of the inventory tablets especially, and the balance are numerals. The numerical systems employed throughout the period have been explained and are perfectly understood (FIGURE 18). The syllabic signs are grouped together usually in 3's and 4's, forming words which, especially in documents of Linear Script B, are clearly indicated by vertical short strokes or by a change in the size of their signs. Thus far it has become possible to identify 750 sign-groups or words, of which, according to VENTRIS, 250 are proper names. The work of our scholars, and especially of EVANS, SUNDWALL, and Miss KOBER, has proved that certain signs were used as prefixes, others as suffixes; that they indicated gender or case. Thus it became possible to con-

HIEROGLYPHIC	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
LINEAR A	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
LINEAR B	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
MAINLAND OF GREECE	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
PREHISTORIC CYPRIOTE	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
HISTORIC CYPRIOTE	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
VALUE	MU	NA	PA	SA	SE	SI	SU	TA	TE	TI

FIG. 17. Comparative table of Minoan, Helladic, and Cypriot signs of the prehistoric and historic periods with their syllabic values (after J. F. DANIEL, *American Journal of Archaeology* 45 [1941] page 254, Fig. 1b.).

clude that the unknown Minoan language was inflected.

This is about all we definitely know on the scripts of Greece. Of course a number of attempts were made to establish the syllabic value of the signs and thus to read the Minoan inscriptions. These attempts were either arbitrary or limited. The most scientific of them were based on the syllabary used in Cyprus in historic times. There can be no doubt that the signs of that syllabary were developed from the signs of the prehistoric script of that island, which apparently was derived from the Minoan Linear Script A. There is a great probability that the syllabic values of similar signs in those scripts were the same. Thus we can assume the syllabic value of some of the signs of the prehistoric script of Cyprus, and attribute the same syllabic value to their parent signs of the Minoan script (FIGURE 17). Scholars differ in their equation of these signs. SUNDWALL recognizes the affinity of 33 signs; PERSSON maintains that 44 signs belong together; CASSON admits 13, DANIELS 21, and MYLONAS 37 in their equations. But even after we have equated the signs and have assumed their syllabic values, even then we cannot be sure of the correctness of our attempt, because the Minoan language has remained unknown and there is no way of proving that our readings are correct.

The greatest and most important part of the inscribed material from the Mainland of Greece comes from Pylos. If all or even some of the Pylos tablets contained inscriptions written in the Greek language they could hold the promise of a correct reading with the help of the Cypriot historic syllabary. This promise, however, seems to be very tenuous, since in his preliminary report BLEGEN has suggested that the language of the tablets is Minoan. Other documents, however, may have been inscribed in Greek. This was assumed by PERSSON for the inscribed vase fragments of Asine and by MYLONAS for the inscribed stirrup vase of Eleusis. Based on that assumption, and on the similarity of some of the signs on those documents to signs of the historic syllabary of Cyprus, they suggested a reading that seems to make sense. But even if their readings and interpretations are correct, the signs whose syllabic value could thus be obtained, added to the known Cypriot signs, do not seem to be sufficient to give us the decisive key to the Minoan script. But they

will assist further investigation, since every little helps and the solution can only be reached by small degrees.

Prospects for the Future

The final hope for a complete solution of the problem seems to rest in the future discovery of one or more bilingual inscriptions. After all, through the aid of such inscriptions other unknown scripts were deciphered. The Rosetta Stone, bearing a bilingual inscription in honor of Ptolemy Epiphanes, enabled FRANCOIS CHAMPOLLION to give us the key to the Egyptian scripts. The trilingual inscription of the Persian King Darius I on the Behistun hillside and SIR HENRY RAWLINSON's work on it provided the final solution of the cuneiform riddle. Bilingual inscriptions helped to determine the syllabic values of the characters of the historic syllabary of Cyprus. When and if such bilingual inscriptions are discovered in the Mainland of Greece and in Crete they will provide the key to the prehistoric scripts of Greece. Even inscriptions in the Greek language written in the Linear Scripts of prehistoric times will be of great value to the work of decipherment; but these are still a boon devoutly to be wished.

In the meanwhile, however, there is a good deal of spade work still to be done. The expected full publication of the Cretan material collected by EVANS, and of the Pylos tablets discovered by BLEGEN and KOUROUNIOTES, will add considerably to the documents at the disposal of scholars and, although they may not prove sufficient for the solution of the problem, they will certainly advance our knowledge considerably. Discoveries to be made in future excavations will increase that knowledge and some day will give us the desired solution. Until then the complete decipherment of the Minoan scripts of Greece will remain the major problem of Greek Archaeology, a fascinating and absorbing problem indeed. For there is nothing more intriguing in the study of the remains of the past than a document covered with characters which no one can read. No object, however, artistic or valuable, can appeal more to the imagination and to human ingenuity than the lowly tablet with its outlandish signs. Only those who have held in their hands such a tablet, covered with the dust of ages and blurred by the rubbing of the sands of time, will be able to realize fully the challenge presented by the problem.

*Photos courtesy London Times*

THE ROMAN PARADE HELMET FROM WORTHING, NORFOLK

IN AUGUST, 1947, DREDGING OPERATIONS IN THE RIVER Wensum at Worthing, 15 miles northwest of Norwich, Norfolk, revealed a well-preserved example of a decorated Roman parade helmet, which has been presented to Norwich Castle Museum. The helmet was dredged from a thin bed of peat under two to three feet of shingle. From the same deposit came fragments of Roman pottery, a pair of iron shackles which had evidently been forced, a deer antler haft for a tool and fragmentary remains of horse and oxen.

Adjacent to the helmet and across the modern river-bed were the oak piles of a Roman timber bridge or its abutment. By a comparison of the tree-rings of its timbers with a dated series from Sussex, the first occasion on which this technique has been applied in Britain, the construction of this bridge has been tentatively dated to the early part of the second century A.D.

The helmet is of bronze, but contains some zinc, according to spectographic analysis. Its surface was originally gilded. The distinctive crest, which is soldered internally, terminates in an eagle's beak and is flanked by eagle's feathers. The two sides of the helmet are

decorated in repoussé work with sea-dragons, the treatment of which suggests that the helmet may be the handiwork of a British craftsman. The front of the helmet is plain save for two serpents whose heads come beneath the dragon's claws at the sides. A rivet in the base of the forehead secures a fragment apparently of leather with a small iron plate behind. This may have been for a nose-guard. The helmet is unlikely to have had a visor-mask. On the neck-guard is scratched XII, possibly a reference to the unit to which its owner belonged.

At present the helmet is assigned to the late third century A.D. on stylistic grounds alone, as it has not been possible to date it precisely by association or stratigraphy. The most likely explanation for its presence in a non-military area is that it formed part of the equipment of the garrison of one of the Saxon Shore fortresses of the late third and fourth centuries A.D. Only a stationary force is likely to have had the leisure to indulge in the parade exercises and tournaments implied by the possession of this delicate head-piece, and as described by Arrian in 136 A.D.

R. RAINBIRD CLARKE

Norwich Castle Museum

ARCHAEOLOGICAL NEWS

Correction

The curator of the City Art Museum of St. Louis calls our attention to two misstatements in the editorial 'Who Pays for Museums, and How Much?' in our September issue. The City Art Museum is not "allotted each year sizable public funds for purchasing works of art to augment and to improve its collections"; on the contrary, it is allotted no public funds whatever with the exception of the mill tax provided by law. Also, its curators are not appointed under a civil service system; the present curator was chosen on the basis of specialized training and professional experience.

Jerusalem

The director of the American School of Oriental Research in Jerusalem is O. R. SELLERS of McCormick Theological Seminary, Chicago, Illinois. No fellows have been appointed, since it is clear that even if students had managed to reach Jerusalem there would have been no possibility of a normal program of exploration and research. The school buildings have suffered substantial, but at last reports not irreparable, damage from mortar fire.

Baghdad

The annual professor of the American School of Oriental Research at Baghdad is GEORGE G. CAMERON, hitherto of the Oriental Institute of the University of Chicago but henceforth to be Professor of Near Eastern Culture at the University of Michigan, Ann Arbor. On leave of absence until February, he has announced an ambitious project to make a revised transcription of the great trilingual text on Mt. Behistun in Iran, and if possible to bring back casts of the inscribed surfaces.

Summer in Rome

"The session began on July 11 and ended on August 20. It was attended by nineteen students of whom all but three had the M. A. or a higher degree in Classics or Archaeology. They were admitted on a competitive basis from about forty applicants. Sixteen were full- or part-time teachers of the Classics, mostly in secondary schools; the rest were full-time graduate students.

"For the first time, the Middle West sent the largest number of students, seven, as against six from the Atlantic States, four from New England, and one from the South. Thus many parts of our country and its schools and colleges were represented. A student from Canada was also enrolled.

"The pace and character of the instruction were determined by the unusually good background and ability of the class as a whole. Mornings were devoted to work on sites and in museums; afternoon lectures were held at the Academy between five and six. Since the students lived in pensioni in the city where they had breakfast and lunch but dined at the Academy at eight, a period of two hours between the lecture and dinner in a relatively cool part of the day was thus conveniently reserved for study in the Academy library. There were no formal exercises on Saturday and Sunday so that students might have some free time to become acquainted on their own with the non-classical aspects of Rome and to make short trips to other cities.

"Excursions were made to southern Etruria (under Professor BROWN), Monte Albano, Hadrian's villa and Horace's Sabine Farm. Ostia, of course, was visited in some detail. Picnics and swims added greatly to the enjoyment of these trips and once again students learned that *vile Sa-*

binum properly cooled in the *fons Bandusiae* may not have been entirely unworthy of Maecenas. In Rome the usual cultural pleasures were in full swing: opera about three times a week in the unforgettable setting of the Baths of Caracalla and symphony concerts in the Basilica of Maxentius.

"Moreover, the tickets were very inexpensive, which brings me to the matter of expenses. In the leaflet announcing the 1948 session, basic expenses, including transportation from New York and return by sea, were estimated at \$750.00. Most students, I believe, ran over this amount but only because of additional expenses (excursions to other cities, etc.) which were not directly connected with the course. Food is plentiful but expensive, accommodations are not difficult to obtain and transportation within Italy is about on a pre-war level. Because of the very favorable exchange (560 lire to a dollar) food reckoned in dollars and cents cost about what it cost here during this last summer, while other necessities or services were generally less.

"A week's program of study and visits in and around Naples was kindly arranged by Professor MEADER, representing the Naples School, to fill in the time between the ending of the Session and the sailing of one of the ships on which a number of the Academy students were returning. Although this program was not an integral part of the Academy's Summer Session, it proved to be a most successful addition to it last year and I hope that it may be continued in the future." — HENRY T. ROWELL

Athens School

Fellows of the American School of Classical Studies in Athens for 1948-9 are:

Wheeler Fellow: R. K. V. ANDREWS

Seymour Fellow: ANNA SHAW BENJAMIN

Capps Fellow: VIRGINIA GRACE

White Fellow: MARION JENKINS

Special Fellow: HAZEL PALMER

Norton Fellow: HARRY J. CARROLL

American Association of University Women Fellow: EVELYN BYRD HARRISON

Riegel Fellows of Bryn Mawr College: ELLEN LUCILE KOHLER and Mrs. BRUCE M. SMITHSON.

Swedes and Italians in Athens

The new Swedish School of Archaeology in Athens was formally inaugurated at a meeting held in the Gennadeion on May 10, 1948. Those present included the Greek Minister of Education, Mr. D. VOUDOUNBAS, the Swedish Minister to Athens, Mr. K. R. THYBERG, Professor AXEL PERSSON of Uppsala University, and representatives of the other schools. The temporary director of the new school is Dr. ERIK HOLMBERG.

The Italian School of Archaeology, under the direction of Professor DORO LEVI, was re-established during the spring, and it is hoped that with the rehabilitation of its buildings the school will soon resume normal operations.

Australians to Cyprus

Archaeologists at Sydney University have revealed plans to conduct excavations on the Mediterranean island of Cyprus, Australia's first overseas expedition. Permission to excavate a group of sites in the Mylos district, ranging in date from the neolithic period to the Crusades, is understood to have been arranged, and the Antiquities Department of the island has offered to provide expedition headquarters and other aid. It is hoped that work can begin in 1950, the year of Sydney University's centenary celebration.

The organizers of the mission are J. R. STEWART, ancient historian and

a former member of the Cyprus Regiment, A. D. TRENDAL, professor of Greek, and A. H. McDONALD, professor of ancient history, at Sydney University. The University of Melbourne has agreed to co-sponsor the project and other universities in Australia and New Zealand have been invited to participate.

Ark Expedition

We suppose there is some misunderstanding somewhere, but an Associated Press dispatch of June 30, 1948, from Greensboro, North Carolina, quoted Miss BETHEL SMITH, daughter of Dr. A. J. SMITH, dean of the People's Bible School near Greensboro, as saying that Dr. SMITH was one of a group planning an expedition to eastern Turkey to locate and identify the petrified wreckage of Noah's Ark, which they believe is still to be seen on Mount Ararat.

Romans in Azerbaijan?

A United Press dispatch of June 13, 1948, quoted the Moscow radio as reporting the discovery of a six-line Latin inscription dating from the reign of Domitian and referring to the Twentieth Legion, by an Azerbaijanian archaeologist named JAFAR ZADE, at a place 37 miles south of Baku, capital of the Azerbaijan Soviet Socialist Republic. The find was described as the first actual evidence of Roman penetration in Azerbaijan.

I. I. H. R.

The foundation, in Alexandria, of the International Institute for Hellenistic Research, under the presidency of Prince Peter of Greece, has been announced by its first director, Professor PIERRE JOUGUET, Member of the Institut de France. The Institute is to provide a research center for Hellenistic studies and for oriental studies in general, with a library, reading room, and a bulletin to be named the *Archives des recherches hellénistiques*. Those who desire fur-

ther information may write Professor JOUGUET in care of the Royal Archaeological Society, 6 Rue Gerbel, Alexandria, Egypt. Participants who engage to pay L. E. 10 a year for five years will be enrolled as Founders; Corresponding Members are to be elected by the council.

Submarine Archaeology

A French expedition attempting to locate the ancient port of Carthage has reported to the Academy of Inscriptions the discovery, at a point between Sousse and Sfax on the Tunisian coast, of a sunken Roman galley of the first century A.D. Readers of Dr. KARO's account (pages 179-185) of the dramatic discoveries previously made on the ocean floor will await the detailed description of its cargo with heightened interest.

In the meantime, a Milan newspaper had carried a report that a diver had discovered three submerged cities off the coast of Sicily, two in the strait between Sicily and Pantelleria, the other off Trapani. Archaeologists commented that finds of the proportions described were "extremely unlikely."

Temple at Eridu

An expedition sponsored by the department of antiquities of Iraq has been digging for two seasons at Eridu in Babylonia. NAJI ALASIL, director-general of antiquities, has announced that the expedition has uncovered a succession of prehistoric temples each older than the one above it; for temple 17, the earliest, built on sand near what was then the shoreline of the Persian Gulf, Dr. ALASIL claims a date of 4500 to 5000 B.C. The level of this temple contains elaborately painted pottery, and near it has been found a cemetery of two hundred burials.

Latins in the Levant

ROY KEVIN V. ANDREWS, Norton Fellow of the Athens School in 1947-

48, and Wheeler Fellow for 1948-49, is preparing for publication a monograph on Venetian military architecture in the Morea (Peloponnesus) during the period 1684-1715. The Gennadeion Library in Athens contains, for example, a long series of Venetian designs of nineteen Peloponnesian fortresses, drawn by the engineers of FRANCESCO MOROSINI, Governor of the Morea in 1698-1701, which will be used in illustration of Mr. ANDREWS' monograph.

Czech Information Bulletin

The Czechoslovak Archaeological Institute, Vlasska 19, Prague III, Czechoslovakia, has begun the publication of a mimeographed serial, *Information Bulletin*, which will appear in Czech and also in an English edition. The second number, which is on our desk, is dated May 1948 and contains information about the organization of the archaeological services, museums and exhibitions, an extensive summary of new discoveries and researches, particularly from the prehistoric period, and a list of Czech publications in 1947 and 1948.

Archaeological News-Letter

In addition to our own Institute's *Archaeological Newsletter*, there is now an English *Archaeological News-Letter*, edited by W. CRUMP and D. HEIGHES WOODHOUSE, publication of which was begun early in 1948. This is a neatly printed pamphlet, issued monthly, without illustrations. In addition to current news from the field, personal news, and announcements and reports of meetings, courses, and lectures, the *News-Letters* contain signed articles of general or local interest on archaeological topics, book reviews, and lists of new books. The periods covered are Prehistory, Roman Britain, and Anglo-Saxon England. This is a periodical potentially of great usefulness in its field.

Subscriptions (10s. 6d. a year, post free to any address) may be sent to the publication offices, 273 Grays Inn Road, London, W. C. 1, England.

Prehistoric Footprints

ABBE DOMINIQUE CATHALA, French speleologist, has reported the discovery, in a vast cave recently explored in the Minerve district of the department of Hérault, of numerous excellently preserved footprints, of human beings and of such animals as bears and hyenas, and also coproliths, all apparently dating from the prehistoric period. A recent issue of the *Illustrated London News* contains photographs of these provocative finds.

Time Capsule

In our Autumn issue we celebrated the tenth anniversary of the burial of the Time Capsule ("Journey Into Time," *ARCHAEOLOGY* 1.165-168). A correspondent has reminded us that this was by no means the unique enterprise of its kind, as witness the following dispatch, dated 1938, from Moscow:

Palace of Soviet Adopts N. Y. 'Time Capsule' Idea Russians Say Theirs Will Be Bigger and Better

MOSCOW, Dec. 12 (UP).—A "time capsule," which Russian scientists said will be bigger and better than that buried at the New York World's Fair 1939, will be placed in the fountain of the Palace of the Soviet, it was learned today.

Professor N. M. Pikhunov, of the Academy of Friends of the Soviet Union, wrote in the newspaper "Izvestia" that the capsule will contain a record of the development of Socialism and Communism. He criticized the New York "time capsule" as a publicity stunt and said it contained only "bourgeois" concepts of what would be valuable and interesting 5,000 years hence.

The Palace of the Soviet is designed to be the highest and one of the largest buildings in the world. The capsule, which will be placed under it, will be duplicated in other parts of Russia "because we do not know what changes may take place in the course of time," Pikhunov said.

Mycenaeans in Cyprus

CLAUDE SCHAEFFER announced at the August meeting of the Académie des Inscriptions et Belles-Lettres the discovery in Cyprus, by the French

expedition of which he is the director, of a seaport of Late Bronze Age (Mycenaean) date, used principally for the shipment of copper to mainland ports.

Smithsonian Institution

In 1948 the Smithsonian Institution has been active on many fronts. We have already reported such projects as the Institution's general supervision of the emergency exploration of areas presently to be flooded in consequence of land-reclamation and flood-control activities in the Missouri Basin, and HENRY B. COLLINS, JR.'s plan to search for ancient Eskimo ruins in the northern part of the Canadian Arctic archipelago, on the Hudson Bay-Greenland migration route. More recent releases from the Smithsonian are excerpted in the order in which they have reached our desk:

PANAMA:—A joint National Geographic Society-Smithsonian Institution expedition, directed by MATTHEW W. STIRLING with the assistance of GORDON R. WILLEY, excavating shell-heaps at Monagrillo, near the mouth of the Parita river, Herrera province, Panama, discovered pottery types and other artifacts from the first millennium B.C., evidence that in this period here as elsewhere the Indians were beginning to give up their nomad culture for the arts and crafts characteristic of sedentary community life.

WESTERN STATES:—Archaeological survey parties spent the summer exploring river valleys in Nebraska, North and South Dakota, Wyoming, Texas, Oklahoma, Colorado, and Washington, in an effort to recover prehistoric habitation sites and palaeontological remains in areas soon to be flooded. At Heart Butte, North Dakota, were located a cave shelter and a large deposit of bison bones, remains of an enormous slaughter. At Medicine Creek, Nebraska, excavations were begun in a pre-Columbian earth-lodge village. WALDO R. WEDEL is directing the work in

The sensational

EARLIEST RECORDS OF CHRISTIANITY

Apparently the family tomb of one of Jesus' Disciples
(Life, 22 Dec., 1947)

are treated with scholarly accuracy and fulness in an article by the discoverer, E. L. Sukenik, specially reprinted from the *American Journal of Archaeology*, and obtainable for \$1.00 a copy (80c each in lots of 20 or more), postage included, from the

ARCHAEOLOGICAL INSTITUTE OF AMERICA
ANDOVER HALL
CAMBRIDGE 38, MASS.

the Missouri Basin area; PHILIP DRUCKER is supervising the surveys in the Columbia river region; and the program as a whole is under the direction of FRANK H. H. ROBERTS, JR., Associate Director of the Smithsonian's Bureau of American Ethnology.

GEORGIA—SOUTH CAROLINAS—In the basin of the Savannah river and its tributaries, in eastern Georgia and southwestern South Carolina, engineers are preparing to construct the Clark Hill reservoir, which will flood an area 37 miles long, permanently destroying any archaeological sites which may exist there. In cooperation with the National Park Service and the Army Corps of Engineers, Smithsonian archaeologists CARL F. MILLER and JOSEPH R. CALDWELL have surveyed this region to find and mark archaeological sites for possible emergency excavation. In mid-sum-

mer they reported the discovery of 150 habitation sites, mostly pre-Columbian, several going back to the proto-ceramic or pre-ceramic period.

MISSISSIPPI VALLEY:—The Smithsonian took notice in 1948 of the hundredth anniversary of its first major contribution to knowledge, publication of *Ancient Monuments of the Mississippi Valley*, by EDWIN HAMILTON DAVIS, Chillicothe physician, and EPHRAIM GEORGE SQUIER, country editor, based on their excavations and surface explorations among nearly a hundred Indian mounds east of the Mississippi.

WEST VIRGINIA:—The Bluestone Reservoir, already under construction, will flood 35 miles of the New River valley between Hinton, W. Va., and Narrows, Va., an age-old travel route and warpath of pre-Columbian Indians, archaeologically almost unknown. To this valley the Smith-

sonian sent RALPH S. SOLECKI, who has reported the discovery of 42 sites, village and camp remains, earth and rock mounds, and rock shelters, as well as four forts built by white settlers. Deposits five feet in depth on the floor of one rock shelter appear to contain a stratigraphic sequence extending from the beginning of the Christian era down to colonial times.

Dr. SOLECKI also surveyed the area of a proposed reservoir on the West Fork river, a branch of the Monongahela in north central West Virginia, locating 14 more small Indian camps.

ALASKA:—RAYMOND M. THOMPSON of the U. S. Geological Survey has forwarded to the Smithsonian an exquisite Folsom point, a spear head of black chert, from the headwaters of the Utukok river in northwestern Alaska. Folsom points have been

found widely in the western states, frequently in association with fossilized bones of animals believed to have become extinct by the end of the last ice age ten thousand years ago, but—to the despair of anthropologists—never yet in association with human remains. The discovery of an artifact of this distinct type in Alaska is sensationally important in itself and of great potential significance to the study of the primitive migration route from Asia to North America.

Dr. THOMPSON located in all 17 archaeological sites, apparently occupied by Eskimos during late pre-Columbian or early historic times.

COLOMBIA:—Dr. LUIS DUQUE GOMEZ, director of the Ethnological and Archaeological Institute at Bogotá, Colombia, is at the Smithsonian on an exchange fellowship arranged by the State Department. Dr. DUQUE has brought news of two important pre-Columbian sites in Colombia, the stone city of Pueblito, near Santa Marta in northern Colombia, and the ancient cemetery at San Agustín, in southern Colombia.

NCPHSB

The National Council for the Preservation of Historic Sites and Buildings, holding its second annual meeting in Washington on November 4 and 5, adopted recommendations for the creation of a national trust for the preservation of sites and structures significant in American history. Under a national charter similar to those of the Smithsonian Institution and the National Gallery of Art, the NCPHSB would receive jeopardized historical property. Speakers described analogous provisions in France and England and the Williamsburg project.

AIA delegate to the Council is RICHARD H. HOWLAND of The Johns Hopkins University.

Traveling Exhibitions

The American Federation of Arts announces the addition of two travel-

ing exhibitions to its list: "Guatemala by Hans Namuth," an exhibition of photographs, and "Pre-Spanish Peruvian Textiles." Further information about these exhibitions may be obtained from the AFA offices at 1262 New Hampshire Avenue, N. W., Washington 6, D. C.

Colt Archaeological Institute

The first grant of the Colt Archaeological Institute has been made to Mrs. ROBERT A. ALEXANDER, of the Institute of Fine Arts, New York University, and the Rhode Island School of Design, for photography of early Christian tomb mosaics and other archaeological material in Algeria and Tunis.

Applications for grants may be filed at any time; under present plans the Committee on Grants of the CAI will sit quarterly, and will act upon applications received during the quarter.

Word received from the Publications Committee of the CAI indicates that Volume II of the *Excavations at Nessana* series, containing the literary papyri from the site, is in page proof and is to appear early in 1949. The authors are ERNEST L. HETTICH and LIONEL CASSON of the New York University classics department. Preparation of Volume I, containing the topography and monuments of Nessana and all finds other than papyri, and Volume III, containing the historical and economic papyri, is well advanced.

Color Slides

SAUL S. WEINBERG, until recently of the Athens School staff and now at the University of Missouri, brought back with him from the Mediterranean some four hundred color slides of landscapes, sites, monuments, and art objects in Greece, Sicily, and Italy, all taken during 1946-48, and classified in ten groups of twenty-five to forty each. Copies may be ordered through Professor WEINBERG. The complete collection will be available

for inspection at the St. Louis meeting of the Institute. Information about prices and a list of the slides themselves may be obtained from Prof. SAUL S. WEINBERG, 211 Jesse Hall, University of Missouri, Columbia, Missouri.

Manuscript Exhibition

The Walters Art Gallery, Baltimore, Maryland, is organizing an extensive exhibition of western European illuminated manuscripts ranging from the eighth through the sixteenth century. Described as the first comprehensive attempt to present the finest possessions of the country in this field, the exhibition will include over two hundred items, including loans from the Library of Congress, New York Public Library, Pierpont Morgan Library, the libraries at Philadelphia, Boston, Harvard, Yale, and Princeton, and others.

The exhibition will be installed at the Baltimore Museum of Art, opening formally on January 27, 1949, to coincide with the annual meeting of the College Art Association, and running until March 13.

Gloucester

The October, 1948, number of the *Gloucester and County Chamber of Commerce Monthly Journal* contains a communication from CHARLES GREEN, who has excavated the interesting group of earthworks at Newark Camp, Hempsted, on the outskirts of Gloucester, which since 1860 has been assumed to be part of the defenses of Roman Gloucester. Mr. GREEN found late mediaeval pottery deep in the ramparts, placing them beyond doubt not earlier than c. 1400 A.D. He had previously shown that the original Roman fort in this area was at Kingsholm, north of the city.

A. J. B. Wace

A. J. B. Wace, Professor of Archaeology at Farouk University, Alexan-

dria, Egypt, and Emeritus Professor of Cambridge University, is in Princeton, where he and Mrs. WACE will remain until January to oversee the final stages of printing his forthcoming volume on Mycenae.

André Grabar

ANDRÉ GRABAR of the Collège de France, leading French Byzantinist, is in Washington, as Visiting Professor at Dumbarton Oaks Research Library and Collection.

Athens School

Latest available word from the American School of Classical Studies at Athens indicates that political conditions have not interfered seriously with the program of instruction. The northern trip, October 6-15, included all the sites usually visited before the war except Thermopylae and the Phocian citadels. The southern trip was curtailed; because of conditions in the Argolid the visit to Mycenae,

Tiryns and Epidauros was deferred and the School instead devoted four days (October 22-25) to Corinth, including the ports of Lechaem and Cenchreae and the ascent of Acrocorinth. The School next planned a trip to the islands, beginning November 2.

In the Agora, MARGARET THOMPSON's task of cleaning, identifying, and cataloguing the coins left over from before the war was nearing completion. Progress has been made in sorting and putting in order the great mass of miscellaneous marbles scattered over the Stoa of Attalos, which is under consideration as the site of the Agora Museum, not only to clean up the area but to identify architectural marbles belonging to the stoa itself. Work has been started on a model of the Odeion, under the supervision of JOHN TRAVLOS, Agora architect.

The Saturday afternoon lectures on the topography and monuments of Athens for the American ECA mis-

sion have been resumed, with attendance of 65 or more.

Nominations

As was announced some time ago, a new President of the ARCHAEOLOGICAL INSTITUTE OF AMERICA will be elected in December at St. Louis. President Dow has taken the lead in introducing three-year terms, and the Nominating Committee has voted unanimously to place in nomination Dr. HUGH HENCKEN of Harvard University, Director of the School of Prehistoric Research. Known to many Societies as one of the INSTITUTE's most popular lecturers, Dr. HENCKEN's publications have ranged down into the Middle Ages. Professor VAN L. JOHNSON of Tufts College, Medford, Massachusetts, has been similarly nominated as General Secretary. So as to make the transition easy, both nominees have received the backing of the Executive Committee, and Professor JOHNSON is serving as General Secretary.

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BRIEF NOTICES OF RECENT BOOKS

The Calendars of Athens. By W. KENDRICK PRITCHETT and O. NEUGEBAUER. xi, 115 pages. Published for the American School of Classical Studies at Athens by the Harvard University Press, Cambridge 1947 \$5.00

The problems presented by the Athenian calendar of the fifth, fourth, third and second centuries have attracted the attention of our leading scholars and became instrumental for the appearance of the monumental publications of FERGUSON, DINSMOOR and MERITT on the subject. To those studies is now added a worthy addition. Our volume is addressed to the specialist, and the average reader who has a general interest in archaeology will find it hard to follow and understand the close-knit arguments, based upon a re-examination of the available evidence including the inscriptions brought to light by American scholars in the Agora of Athens.

Our authors challenge the accepted theories advanced to explain the peculiarities of the Athenian calendar and maintain that Aristotle's statement in the *Constitution of Athens* provides "the only authoritative basis for the calculation of the sequence of days in any given year at the time of the composition of that work."

The evidence is presented in an exemplary fashion and the whole study does credit to the problem. Whether we agree with the authors or not, we have to admit that their work will prove of the utmost importance to the archaeologist and the historian.

G. E. M.

A History of the American School of Classical Studies at Athens, 1882-1942. An Intercollegiate Project, by LOUIS E. LORD. xiv, 417 pages, 1 figure in text, 6 unnumbered plates, 50 numbered plates,

2 plans. Published for the American School of Classical Studies at Athens by the Harvard University Press, Cambridge 1947 \$5.00

From his commanding eminence as chairman (1939-) of the Managing Committee of the American School of Classical Studies at Athens, LOUIS E. LORD has written a painstaking, thoughtful, and disarmingly candid narrative history of the school during its first sixty years.

Founded as a center of classical research in 1882, at the instigation of CHARLES ELIOT NORTON, the school at first offered the most casual of curricula. As Dr. LORD says, "it would not be credible that a debating society like the Managing Committee, composed of professors of Greek, could successfully operate a postgraduate school three thousand miles away." But while administration and instruction were less businesslike than modern standards appear to demand, the existence of the school as a base of operations prompted the independent researches of such pioneers as HAROLD NORTH FOWLER and the late PAUL SHOREY, JAMES RIGNALL WHEELER, J. R. SITLINGTON STERRETT (publication of whose epigraphical papers was held up until he should "consent to moderate the language in which he had denounced certain French scholars"), LEWIS R. PACKARD, and WALTER MILLER. Out of chaos, however, grew first order and then aggressive scholarship.

Many documents which might have filled out the record of the early years have disappeared; for the later years Dr. LORD could draw upon the memories of men now living, and on his own intimate experience of the events of this generation. The lack of occasional details has not prevented him from composing an illuminating narrative of a utopian experiment which succeeded beyond its planners' wildest dreams.

Remarking that he has rejected the suggestion that the history of the school be presented with no references to mistakes made and policies discredited, Dr. LORD has let several academic cats out of the bag. This is the volume the appearance of whose galley proofs gave rise early in 1947 to rumors of controversy, and your reviewer can only suppose that the controversy arose from Dr. LORD's estimate of one or more of the vigorous personalities produced by the school. Informed and impartial observers must appraise these episodes as objective historical narrative at its best, and tempered with more than routine affection for the issues as well as the subjects involved.

In a few instances the author resorts to a reticence which is as exasperating as it is contrary to his nature. Thus, his cryptic reference to the Managing Committee's decision not to reappoint FERDINAND JOSEPH MARIA DE WAELE as Assistant in Archaeology in 1934, "... He had served the School well as an excavator, his work at the Asklepieion had been competent. But he never made a final report for publication, and the manner of his departure left behind him an odor of unsanctity highly offensive to the School," only serves to make the reader wonder what terminal offense this paragon of Batavian scholarship could have committed to alienate the tolerant officers of the School.

In six appendices, Dr. LORD reprints HAROLD NORTH FOWLER's reminiscences of the first year of the School and WALTER MILLER's immortal 'How I Became a Captain in the Greek Army,' and lists the School's excavations, publications, and special endowments, and trustees, Managing Committee, faculty, and students, followed by an index, 50 plates which record the highlights of

(Continued on page 230)



*The publications
of the Committee for
the Excavation of*

ANTIOCH- ON-THE- ORONTES

Published under the auspices of the Musées Nationaux de France, and the Museums of Baltimore, Worcester, Princeton University, Dumbarton Oaks, and the Fogg Museum.

ONE OF the four great cities of the Roman Empire, Antioch-on-the-Orontes stood at the threshold of the East. Through its double heritage of Graeco-Roman and Oriental culture, it was a powerful force in the shaping of Mediterranean art. The Antioch excavations offer exceptional opportunities for the archaeologist, since the modern town has not recovered its former metropolitan size, and most of its ancient sites are untouched by modern building plans.

Here are the first four volumes based on the findings of the Antioch expedition.

I. THE EXCAVATIONS OF 1932

Edited by *George W. Elderkin*. 165 pages, 11" x 14½". Profusely illustrated. \$15.00

II. THE EXCAVATIONS OF 1933-1936

Edited by *Richard Stillwell*. 250 pages, 11" x 13½". 80 collotype plates. \$25.00

III. THE EXCAVATIONS OF 1937-1939

Edited by *Richard Stillwell*. 260 pages, 11" x 13½". 91 collotype plates. \$25.00

IV. Part 1: CERAMICS AND ISLAMIC COINS

Edited by *Fred O. Waagé*. 124 pages, 11" x 13½". \$20.00

An important related volume

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By *DORO LEVI*. A comparative and critical study of Antioch's greatest treasures—the superb mosaics which have opened up an entirely new chapter in the history of painting. 2 volumes, 672 pages, 11" x 14". Illustrated, \$40.00

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the School's first sixty years of operation, and plans of Corinth and the Agora of Athens.

J. J.

The Excavations at Dura-Europos: Final Report IV, Part III: The Lamps. By PAUL V. C. BAUR. viii, 84 pages, 38 figures in text. Yale University Press, New Haven 1947

This is the third volume to appear of the final publications of the important results of the excavations conducted jointly by Yale University and the French Academy of Inscriptions and Letters at Dura, between 1928 and 1937. The two previous volumes dealt with the Green Glazed Pottery and the Textiles. In this study of the lamps, Professor BAUR catalogues some 459 examples, divided into nine types of clay lamps and various categories of bronze, iron, and stone examples.

His findings are illuminating not only for the detailed description of local lamps made at Dura, but for the imported examples from Athens, Rome, Antioch, etc., which give additional information on commercial relationships between these ancient centers. There is a brief but authoritative discussion of the nature of antique lamps in general, and the sixteen plates present excellent photographs of the major varieties and forms of the catalogued examples.

RICHARD H. HOWLAND

The Johns Hopkins University

Thomas Jefferson, American Humanist, by KARL LEHMANN. 273 pages, frontispiece, 12 illustrations. Macmillan, New York 1947 \$4.50

The volume is a timely tribute to a great humanist — and to the humanities — offered by an outstanding archaeologist and student of the classics. That JEFFERSON was at once a man of fine and great proportions is now legend; that the list of biographies and other works on JEFFERSON continues to grow indicates a deep source of inspiration within the nature of the man. As EMERSON has said of another, "it is the best sign of a great nature that it opens a foreground, and, like the breath of the morning landscapes, invites us onwards."

In developing his theme of JEFFERSON as a Humanist, Dr. LEHMANN emphasizes the influence of classical values upon the mind and heart of his subject. He finds JEFFERSON to be less pedant than an adventurer into the greatest minds of ancient civilizations; a man seeking to broaden and enrich his own experiences, and to better integrate fundamental ideals of liberty, tranquillity, and happiness in the service of his own society.

The volume is neatly drafted in three parts, corresponding to specific classical influences, and animated by well-documented quotations from JEFFERSON's published writings. In the organization of the chapters "Mature Exploration," "Pursuit of the Concrete," "Freedom of Thought," "Forceful Imagination," and "Creative Architecture," there is felt the

hand of a humanist-philosopher; only in the last essay do I find a tedium in the overdrawn accounts of a creativity that many architects could challenge.

JEFFERSON is portrayed as an eclectic; and yet the author reasonably concludes that a vast historical knowledge, a deep conviction about the singularity of experiences in time, and a zeal for the "fearless pursuit of truth whithersoever it leads" contribute to a "re-casting of ideas . . . regardless of source." We find that facts without values, artistic speech without euphony and strength, and systems without progressive ends, were of the least interest to JEFFERSON, however correct in themselves. Perception, knowledge, and judgment in terms of one's daily experiences, with increasing individual control over physical and human natures, were uppermost in his mind.

It was clear to JEFFERSON that a free society could be sustained only by the enlightenment of the individuals of which it was composed; that education should be a never-ending experience to better judge "what may secure or endanger his freedom." He was opposed to tyranny in any form, and especially a tyranny over the mind.

We should welcome this study of *Thomas Jefferson, American Humanist*. It is my hope that the book will be widely read by laymen and students; and may it survive to bear witness in the age when principles based on freedom shall be embraced by all mankind.

EUGENE J. MACKEY
Washington University

NEW BOOKS

Selected at the editorial offices from various sources including bibliographical publications, publishers' announcements, and books received. Prices have not been confirmed.

ANTHONY, THEODORE VAN WYCK. *Chiefly Hellenic Reveries*. 4 pages. Exposition Press, New York 1948 \$2.00

BELLAMY, H. S. *The Atlantis Myth*. 168 pages. Faber, London 1948 10s. 6d.

BORODIN, GEORGE. *Pillar of Fire: Zenobia, Queen of Palmyra*. 420 pages. McBride, New York 1948 \$3.00

BOTSFORD, GEORGE WILLIS, and CHARLES ALEXANDER ROBINSON, JR. *Hellenic History*. Third edition. xix, 509 pages, 19 figures in text, 103 plates, 28 maps. Macmillan, New York 1948 \$6.00

BURN, ANDREW ROBERT. *Alexander the Great and the Hellenistic Empire*. 310 pages, map. Macmillan, New York 1948 \$2.00

BURNS, CECIL DELISLE. *The First Europe; a study of the establishment of medieval Christendom, A.D. 400-800*. 684 pages, ill., maps. Norton, New York 1948 \$7.50

CAHN, HERBERT. *Griechische Münzen archaischer Zeit*. 32 pages, 19 plates. Amerbach-Verlag, Basel 1947 3.80 Swiss fr. Centre national de la recherche scientifique. Gallia. Fouilles et monuments archéologiques en France métropolitaine, T. V, Fasc. 1 (1947). 234 pages, ill. Ministère de l'éducation nationale, Paris 1200 fr.

CHAPOUTIER, FERNAND. *En Grèce*. Illustré par 120 photographies d'ANTOINE BON. Paul Hartmann, Paris 1948 300 fr.

CONTENEAU, G. *La Magie chez les Assyriens et les Babyloniens*. 306 pages. Paris 1947 (\$3.25)

Council for British Archaeology. *Survey and Policy of Field Research in the Archaeology of Great Britain. I, The Prehistoric and Early Historic Ages to the Seventh Century A.D.* Edited by CHRISTOPHER HAWKES and STUART PIGGOTT. 120 pages. Published at the Office of the Council in the Institute of Archaeology of the University of London, London 1948 5s.

DEICHMANN, FRIEDRICH. *Frühchristliche Kirchen in Rom*. 100 pages, ill. Amerbach-Verlag, Basel 1948 32 Swiss fr.

DETWEILER, A. HENRY. *Manual of Archaeological Surveying*. x, 129 pages, 24 figures in text, logarithm tables, 3 specimen sheets from field books. American Schools of Oriental Research, New Haven 1948 (Archaeology: Vol. II) \$1.75

EVERY, GEORGE. *The Byzantine Patriarchate, 451-1204*. 212 pages. Macmillan, New York 1948 \$3.00

FORMAN, HENRY CHANDLEE. *The Architecture of the Old South. The Medieval Style, 1585-1850*. xiv, 203 pages, 282 illustrations. Harvard University Press, Cambridge 1948 \$10.00

FORRER, ROBERT. *Die helvetischen und helveto-römischen Votivbeilchen der Schweiz*. 76 pages, 8 plates. Institut für Urgeschichte, Basel 1948 (Schriften des Institutes für Ur- und Frühgeschichte der Schweiz, 5) 12.75 Swiss fr.

FOSTER, GENEVIEVE. *Augustus Caesar's World; a story of ideas and events from B.C. 44 to 14 A.D.* 330 pages, ill. Scribner, London 1948 15s.

GAUL, JAMES HARVEY. *The Neolithic Period in Bulgaria. Early Food-producing Cultures of Eastern Europe*. xlv, 252 pages, 7 maps, frontispiece, 69 plates. American School of Prehistoric Research, (Cambridge) 1948 (American School of Prehistoric Research, Bulletin 16, edited by HUGH HENCKEN) \$4.75

GILPIN, LAURA. *Temples in Yucatan; a camera chronicle of Chichen Itza*. 124 pages, ill., maps. Hastings House, New York 1948 \$5.00

GRAVES, ROBERT. *The White Goddess. A historical grammar of poetic myth*. xii, 412 pages. Creative Age Press, New York 1948 \$4.50

GREGOROVIVUS, FERDINAND. *The Ghetto and the Jews of Rome*. Translated by MOSES HADAS. 120 pages. Schocken Books, New York 1948 \$1.50

GUILLON, PIERRE. *La Béotie antique*. 120 pages, 32 plates, map. Belles Lettres, Paris 1948 650 fr.

HAILE, BERARD. *Navaho sacrificial figurines*. 100 pages, ill. University of Chicago Press, Chicago 1948 \$2.50

HONEY, WILLIAM BOWYER. *The Ceramic Art of China and Other Countries of the Far East*. 456 pages, 198 plates, map. Anglobooks, New York 1948 \$25.00

HOURLICQ, LOUIS. *Grèce*. Hachette, Paris 1948 400 fr.

HOWARD, GEORGE D. *Prehistoric ceramic styles of lowland South America: their distribution and history*. 95 pages, ill. Oxford University Press, Oxford 1948 8s. 6d.

LANGLOTZ, ERNST. *Phidiasprobleme*. 119 pages, 32 plates. Klostermann, Frankfurt am Main 1947 9.50 marks

LAROCHE, E. *Recherches sur les noms des dieux hittites*. 141 pages. Maisonneuve, Paris 1948 400 fr.

MACLEAN, ALISTAIR. *Hebridean Altars*. 157 pages. Moray Press, London 1948 7s. 6d.

MARROU, H. I. *Histoire de l'éducation dans l'antiquité*. 596 pages. du Seuil, Paris 1948 600 fr.

MARTI, OTTO. *Die Völker West- und Mittel-Europas im Altertum*. xii, 259 pages, ill., maps. Verlag für Kunst und Wissenschaft, Baden-Baden 1947

VAN DER MEER, P. *The Ancient Chronology of Western Asia and Egypt*. 71 pages. Brill, Leyden. 1947 (Documenta et monumenta orientis antiqui, 2) 7.50 gldrs.

DU MESNIL DU BUISSON, R. *Le sautoir d'Atargatis et la chaîne d'amulettes*. 26 pages, ill. Brill, Leyden 1947 (Documenta et monumenta orientis antiqui, 1) 7.50 gldrs.

MIREAUX, EMILE. *Les poèmes homériques et l'histoire grecque*. 384 pages. Michel, Paris 1948 360 fr.

NADEL, S. F. *The Nuba: an anthropological study of the hill tribes in Kordofan*. 541 pages, ill., maps. Oxford Press, New York 1948 \$11.00

PARROT, ANDRE. *Mari, une ville perdue et retrouvée par l'archéologie française*. 256 pages. Je Sers, Paris 1948 250 fr.

PRINS DE JONG, E. F. *Griekse grabreliefs*. 58 pages, 84 pages of illustrations. Kroonder, Bussum 1948 4.90 gldrs.

RABINOWITCH, MELITTA. *Der Delphin in Sage und Mythos der Griechen*. 40 pages, 4 plates. Hybernia-Verlag, Dornach-Basel 1947 6.90 Swiss fr.

RENAUD, ETIENNE B. *Archaeology of the high western plains; 17 years of archaeological research*. 135 pages, 6 plates. University of Denver Press, Denver 1947

RICHTER, GISELA M. A. *Roman Portraits*. 110 illustrations. Metropolitan Museum of Art, New York 1948 \$1.50

ROBINSON, CYRIL EDWARD. *Hellas; a short history of Ancient Greece*. 201 pages, ill., map. Pantheon Books, New York 1948 \$3.00

TAYLOR, WALTER W. *A Study of Archeology*. 256 pages, 4 plates. American Anthropological Association, Bloomington 1948 (Memoirs of the American Anthropological Association, No. 69) \$4.00

WAAGE, FREDERICK OSWIN, Ed. *Antioch-on-the-Orontes*. Volume 4, part 1: *Ceramics and Islamic Coins*. 124 pages, ill. Princeton University Press, Princeton 1948 \$20.00

WEIL, R. *La Cité de David, T. II*. 133 pages, 42 plates. Geuthner, Paris 1948 2250 fr.

WILL, WALTER. *Horaz und die augusteische Kultur*. 414 pages. Schwabe, Basel 1948 28 Swiss fr.

WINLOCK, H. E. *The Rise and Fall of the Middle Kingdom in Thebes*. xv, 174 pages, 48 plates. Macmillan, New York 1947 \$5.00

WORMINGTON, MARIE. *Prehistoric Indians of the Southwest*. 191 pages, ill. Colorado Museum of Natural History, Denver 1947

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